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The Third Europe

(page 16)

International Management

August 1961

Logan T. Johnston tells U.S. steelmakers: "Go international or else . . ." (page 21)

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World Affairs

New initiative in commodities

The U.S. government hopes to make bold moves into commodity price stabilization. With Latin American woes on its mind, Washington is likely to join the coffee agreement, possibly with flexible import quotas allocating shares of the U.S. market to producers. The U.S. will want more effective production controls, and will pressure other big consumers to reduce barriers to coffee trade (German taxes are a major offender).

New efforts to stabilize the high-flying tin market are under study in Washington. The decision to participate in a lead-zinc agreement will be reaffirmed. As for textiles, Washington is making some progress encouraging "burden-sharing" among world importers and exporters.

Canada—not enough boom . . .

A ten-year experiment in free-floating exchange rates ended when the Canadian government forced the price of the Canadian dollar down, from a premium over U.S. currency to a discount. The dollar stood at 96½ cents U.S. in early July, but Canadians may want the devaluation to go a few cents further.

It's part of Canada's effort to stimulate home and export demand. The once-booming economy is sluggish, unemployment is at an intolerable level, there's a severe deficit in international payments. So the government plans a big budget deficit, tax cuts, higher depreciation allowances for industry, an export drive. Expect no direct curbs on imports or on foreign investment in Canada. But both will probably fall anyway.

The significance: Canada has opted for an easy-money, expansionist, internationalist policy to cure its troubles, rather than the restrictive, high-tariff regime some nationalists demanded. Also, Canada seems to want better economic relations with the U.S.A., possibly because it believes its other great trading partner, Britain, will eventually associate with the European Common Market. This might reduce Canada's export advantages in the U.K. and in other Commonwealth markets as well.

. . . Japan—too much boom?

Industrial expansion keeps to its headlong course, astounding even the Japanese, to say nothing of the world business community (IM—Feb '61). Flamboyant, even hysterical, overtones are developing. Thus a Tokyo securities firm could write: "The economy has expanded so long and so rapidly that the conventional theory of business cycles seems no longer applicable."

This "new-era" talk worries conservatives. Investment in new plant and equipment is running far ahead of the ten-year plan's expectations; present steel investment schemes will provide by 1965 the 48-million-ton-capacity projected for 1970. This could result in capacity far in excess of Japan's domestic needs. Meanwhile, exports were lagging earlier this year while imports rose sharply.

What's needed, say some bankers privately, are higher interest rates and credit curbs. They fear, among other things, a seasonal run on Japan's foreign exchange reserves (there is some $600-million in short-term money, including deposits of West Europeans).

The answer will be clearer in a month or two. If exports do not rise sharply and if the investment rush continues unabated, the Ikeda government may have to "brake" the boom.

The Africans and Europe

The Africans are out for all they can get in European trade. If they get all they want, producers in Latin America and other areas may suffer.

Sixteen newly-independent states, originally tied to the Common Market as dependent territories, demand even stronger economic ties. They want even broader preferences for their tropical products (for outsiders, the common external tariff on coffee is 16%). They want lower European consumption taxes, relief from quotas, minimum market guarantees, price supports. And they want a hand in the EEC's development fund, seeing to it that it is used to (1) guarantee loans and (2) stabilize commodity prices.

Europe's reaction? You will see how the wind blows at next month's Eurafrican ministerial meeting.

Dutch and Germans will oppose anything that harms traditional trading partners in Latin America and Asia. They will press for price support aid rather than broad tariff concessions. But the French and Belgians will insist that closer ties with African associates will not harm outsiders, claiming Africans now supply only a small part of the produce consumed in Europe and cannot expand production to any great extent. Furthermore, they argue that African efforts to suppress European taxes will benefit everybody.

Compromises are likely. And you can be sure that the U.S.A. and Britain will be pushing from the sidelines for lower barriers all around.

turn the page

Letter from Stockholm

Swedish business is running full-tilt. And it may well continue that way for the rest of the year and on into 1962.

So say some of the most knowledgeable business and government people in this lovely city . . . when you can find them. It is vacation time, and everyone is spending as much time as possible sailing, swimming, and soaking up sun at the myriad island retreats in the Stockholm archipelago. The Swedes, already enjoying Europe's highest living standard, are having the most prosperous summer of their lives. There is more of everything—salaries, cars, television, appliances, travel, plastic boats and outboard motors.

Many of these material comforts are imported, and Sweden is surely one of the most competitive marketing arenas in the world. West Germany is still the leading supplier (22% of all imports). But there is a slight swing toward imports from other Free Trade Association partners compared to those from the Common Market Six. Outsiders too: Japanese TV and optical equipment, U.S. ladies' underwear and outboard motors, to name a few items, are doing fine.

A quick roundup of the boom: Industry is at full capacity in most sectors ("We're rejecting orders each week," says a machinery maker); production is up 5% to 6% over last year; building is bustling in spite of tighter credit; and planned investment in industry and public utilities this year will exceed 1960 spending by a mighty 20%. Exports? Probably up 6% in volume, imports, 4% to 5%. Private consumption is running about 5% higher. It is hard to find anyone worrying—especially in August.

But there are worries. The boom is "overheating" a bit. The shortage of skilled labor is slowing expansion, and speeding wage increases. And there is the problem of European trade.

Planning investment and marketing strategy in the face of the European trade split is causing businessmen sleepless nights. It is a situation where, as one cynic put it, "Never have so many known so little on such loose grounds about matters of such importance."

While the government would find it hard to accept any of the political implications of the EEC Treaty, most businessmen believe the gains from association with the Six would far outweigh political considerations.

Indeed, most businessmen seem convinced that association will come eventually. And they are losing no time expanding and modernizing to meet the competition ahead. Automakers will double output by 1965; shipyards (probably the busiest in any shipbuilding nation) are mechanizing production techniques; steel capacity will be one-million tons quarterly soon. The forest industries hope to raise pulp output to 500,000 tons in a few years, compared to 100,000 tons now, and three paper mills have brand new kraft paper machines in operation.

You will see more mergers and production agreements in Swedish industry. A recent example: a pact between Monark-Crescent, maker of outboard motors and cycles, and Husqvarna, the big engineering and housewares combine. By rationalizing their resources short of merger, Monark becomes one of Europe's top bicycle makers, powered and unpowered, and Husqvarna, a leader in cycle engines.

Overseas activities are increasing. There will be more licensing deals, more plants abroad; India and Brazil are markets where several companies have begun manufacture and there's growing interest in Africa. Look for more intense export promotion as well (Britain is a major target this year). Good design and engineering are hallmarks here, but with the exception of the big names, not enough is known overseas about Swedish business. "What we need," says a trade expert, "is a broad promotion effort to give a modern picture of Swedish quality."

Debut of the IDA

For almost eight months after the International Development Association (IDA) was formed last fall, nothing was heard from this newest affiliate of the World Bank. In fact, the IDA granted its first credits barely before its second fiscal year began July 1. India ($60-million in roads), the Sudan ($13-million in a dam), Honduras ($9-million in roads), and Chile ($20-million in roads) received the first monies.

The great mystery was not who would get the loans. Rather, speculation centered on whether they would be "soft-currency" loans or not, and on what terms. Knowing World Bank President Eugene Black to be a tower of conservatism, international observers were not surprised to discover that repayment will be in convertible currencies.

Terms of the loans compensate somewhat for this. While the first loans do not necessarily set a pattern, they have the same terms.

Loans are interest-free, repayable in 50 years. The principal is repaid on this schedule: After a 10-year grace period, 1% of the principal is repaid every year for 10 years, then 3% each year for the next 30 years. The IDA collects a service charge of ¾ of 1%.

The IDA now has 46 members and subscribed capital of $870-million. It is legally independent of the World Bank, but the same men hold the same offices in both organizations. IDA loans are processed through the same channels, and Bank officials stress the same standards are applied to projects.

When does a nation qualify for an IDA loan? When "for reasons beyond its control it is not able to achieve a satisfactory rate of economic development on the basis of its own resources and conventional financing." India, for one, qualifies because its debt load is so heavy that more charges would be a burden.

IDA loans are expected to follow the same pattern as World Bank loans—highways, dams—except that more emphasis will be placed on "social development" projects. Urban renewal is an example.

American Letter

Better business, lower prices

The U.S. economy is supposed to be in a period of recovery. Yet industrial prices have been falling.

A likely explanation is that a fundamental change in American business is at hand. And for all the pain that price-cutting causes, it can be very healthy. Lower prices can stimulate domestic demand, as well as make American goods more attractive abroad and imports less attractive at home.

What is behind the price-cutting in steel, electronic components, chemicals, paper, metals, machinery? Even the most carefully-planned plant expansions have caused excess capacity, requiring volume sales at the expense of list prices. Competition from imports and substitute materials is hurting. Purchasing agents have become blase, no longer rush about building inventories against shortages or price rises. And in Washington, the Kennedy government is adamantly opposed to unwarranted price increases.

All this forces new flexibility in pricing. According to a leading editorial in Business Week, it "shakes management out of its complacent assumption that the market always will stand for another pass-along of rising costs." Thus the premium is on more efficient production and more effective marketing.

To sum up, nothing appears basically wrong with the pace of business recovery. It has slowed partly because of the summer shutdowns (especially in autos). Price-cutting is only dangerous if the resulting squeeze on profits discourages needed spending on more modern equipment. But from the looks of things now, production will be pushing upwards again next month and some of the price weakness will disappear.

Wall Street neuroses

It is clear that recovery does not automatically mean higher prices—in industrial goods or in company shares. The Wall Street analysts have been confused, even sounding a bit like psychiatrists as they talk about neurotic reactions in the stock market. A sudden upward spurt here, a steeper decline there, a rush into unknown securities—a manic, indecisive performance if there ever was one.

You should not rule out anything in such a market. True, there is general agreement that many stocks over-reached themselves earlier this year, that prices needed correction. Many expected some version of the traditional "summer rally" in Wall Street prices, so an upturn in July came as no surprise. But they wondered if the market had lasting strength.

The fact is that restiveness in the stock market is not confined to the U.S. Many investors now take an international approach to their buying and selling; uncertainties such as sterling's weakness, international politics, "Six vs. Seven" problems in Europe are worrisome. You have seen signs of indecision in Italy, France, Britain, Germany.

Changing tastes, too. Some "smart" U.S. money is leaning away from some of the old industrial favorites in Europe, moving into consumer-oriented retail establishments and hire-purchase firms. There is more interest in Japanese securities, though a few are concerned about the boom there (page 1).

For their part, the Europeans still buy high-grade U.S. industrial shares. They do not look for real trouble in Wall Street—nor do they see extensive price rises, either. You can find many investment men in Britain and on the Continent who are looking much more carefully at opportunities closer to home. One sign: European mutual funds specializing in U.S. securities have not grown anywhere near as fast as their sponsors expected.

Enter the Peace Corps

Next month the vanguard of the U.S.A.'s much-heralded "Peace Corps" will set sail—to a road-building project in Tanganyika, to a community development project in Colombia. A half-dozen other units will be in the field before the year is out.

The Peace Corps seems to be shaking down into a more realistic, business-like technical assistance scheme. The world is not going to be inundated by a swarm of starry-eyed students bent on "doing good." Peace Corpsmen may be young and dedicated, but they will also be trained technicians, carefully selected to carry out specific assignments, be it surveying, language training, farm development. And note that Peace Corps activities may well open some new opportunities for local businessmen abroad.

Private organizations will administer most of the Corps activities. Thus a poultry and swine production scheme in the West Indies will be carried out by Heifer Project Inc., a nonprofit, church-sponsored agency with great experience distributing farm animals throughout the world.

The real hope in Washington is that the Peace Corps will represent a "fresh start" in technical assistance, and set a high standard of skill and goodwill for all technical assistance agencies. And not overlooked in Washington is the fact that equipping and sending a Peace Corpsman will cost the Treasury an average of less than $10,000 yearly—compared to the $25,000 it costs to finance the average Point Four technician.

turn the page

Letter from Wilmington

To most businessmen, this almost-Southern city of 100,000 is more of an address than a physical location. Because of the attractive corporation laws of the state of Delaware, Wilmington is the legal domicile of thousands of companies. But it is home to one of the giants of them all—the chemical complex known as E. I. du Pont de Nemours & Co.

In many ways, Wilmington is Du Pont. Its executives and staff dominate the town. Much of Du Pont's research is done here—and city fathers proudly quote the company's slogan, pointing out that "Better Things for Better Living . . ." come from Wilmington. Cellophane, nylon, Duco paints in the past; now Delrin, Teflon, Tedlar, Baymal, and hundreds more.

Du Pont is something of an anomaly on the international scene. Though it is the world's biggest chemical producer (1960 sales—$2,142-million; employees—84,000), the company has lagged behind in international investment. That is, until recently. Now Du Pont is moving fast.

Du Pont's relative lag abroad can be explained: For years, it had a profitable arrangement with Britain's Imperial Chemical Industries. The two exchanged patents and divided up world markets. Then, in 1951, the courts held that this arrangement violated U.S. anti-monopoly laws. Since then, Du Pont has been developing its own world program, expanding its exports and, more recently, investing in foreign manufacturing.

The latest venture, announced in June, is a multi-million dollar isocyanate plant in Northern Ireland. It will supply chemicals for making urethane foams—for furniture, auto cushions, clothing interlining in the British and other Free Trade Area markets. The plant will rise right next door to Du Pont's new neoprene synthetic rubber plant.

Other overseas plants operating or planned include a paint factory in Belgium, an Orlon fiber works in the Netherlands; facilities in Argentina, Mexico, Canada and elsewhere.

The object, of course, is to keep pace with American competitors like Union Carbide, Monsanto, American Cyanamid, Dow Chemical —all building rapidly abroad, to say nothing of Britain's ICI, France's Pechiney, and the Germans.

These competitors all keep a close eye on Wilmington. A tour around the laboratories here tells why. Thanks to its vast resources and size, Du Pont has a wealth of new products and materials constantly being researched, developed, test-marketed. Some are consumer items (like the new non-spatter Lucite paint); many are materials that will be further processed by others.

Take the new Tedlar polyvinyl fluoride film. It will compete with Du Pont's own paints. Laminated by a customer to other materials—steel, plyboard, fibrous glass—it will make a structural item that is strong, durable, maintenance-free.

Or the Delrin, Zytel nylon, Lucite resins. These are engineering materials developed as substitutes for steel and cast iron. And besides these resins, Du Pont is coming up with such things as solvents that clean electrical machinery, versatile weed-killers, and an endless array of coatings, fibers, films, synthetic rubbers.

Recently another "better thing for better living" moved out of the laboratory. Du Pont calls it Baymal colloidal alumina, a powder said to be able to break down petroleum into simpler elements, reinforce foam rubber, or quickly combine petroleum and water. In Wilmington, wonders never cease.

Atlantic bridgebuilding

Three more British-American joint ventures, all of them potentially powerful in world markets:

1. **Courtaulds Ltd.** of the U.K. and **Koppers Co.** will explore "areas of mutual interest", following the British rayon-maker's acquisition of 4% of Koppers stock. They will exchange technical, process, and production information in the plastics field.

2. **General Electric Co. Ltd.** of the U.K. and **Thompson Ramo Wooldridge** have jointly set up International Systems Control Ltd. They will be going after steel and power markets in Britain, Europe, and the Commonwealth with industrial process controls.

3. **Mead Johnson & Co.** (the Americans who created a sensation with their weight-reducing "Metrecal" drink) hope to take a 35% voting interest in **British Drug Houses Ltd.**, providing the stockholders agree. The U.S. partner will help finance development at BDH, and exchange information on manufacturing, research, and marketing.

Marketing notes . . .

The U.S. Post Office wants to ban sales promotion contests that require entrants to purchase a product. But contests continue to thrive. A current prize: an airplane and crew, with accommodations for 12 people, plus $5,000 in spending money, for a two-week vacation anywhere in North America. . . . The first private label cigarettes, Shoprite, will be sold by a supermarket chain in New Jersey—40 cents cheaper than standard brands for a 10-pack carton. . . . Despite criticism, trading stamps (given away free with purchases, later redeemed for merchandise) maintain their popularity. A California service station recently stopped giving stamps, watched gasoline sales dwindle from 150 liters to 73 liters a month. Last month, a zealous savings-and-loan institution raffled a million stamps to attract new customers.

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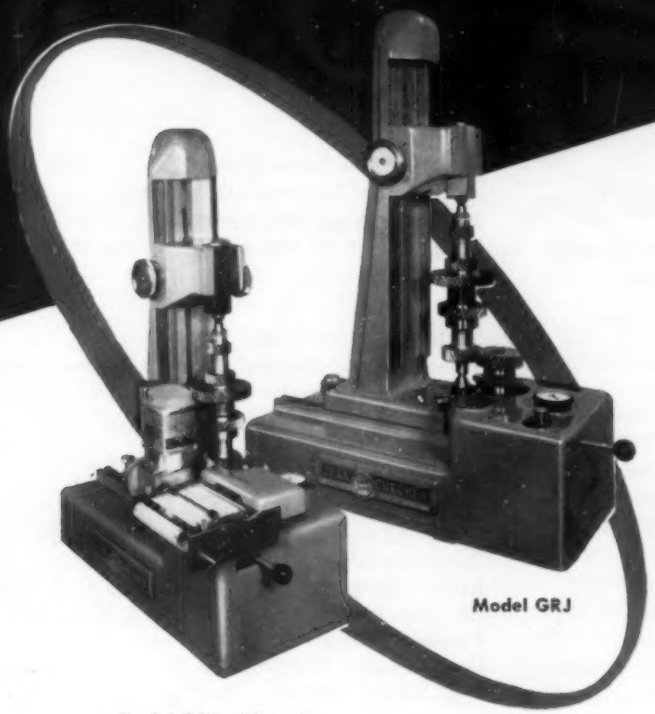

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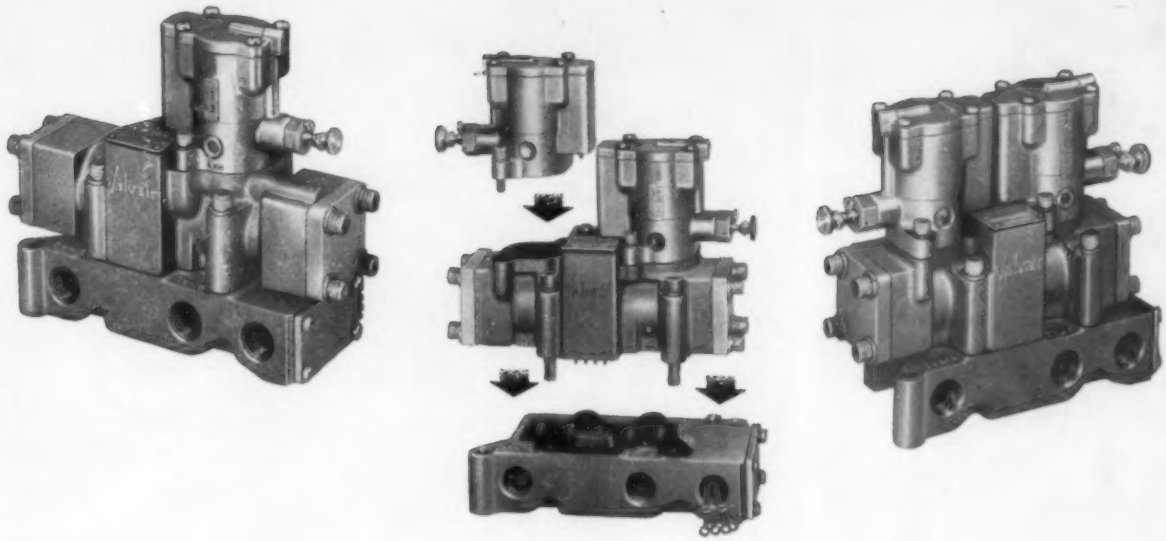

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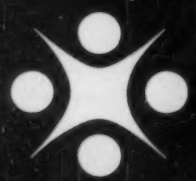


REFRIGERATION PRODUCTS

Driers, Moisture Indicators, Ansul Oil, UCON brand refrigerants.

CHEMICALS

Methyl Chloride, Sulfur Dioxide, Ethers, Fine Chemicals.

Ansul products are sold throughout the free world. In many areas choice distributorships are still available. If interested, write

ANSUL INTERNATIONAL CORPORATION, S. A.

Marinette, Wis., U.S.A. "ANSULINCO"

READERS' REPORT

Bandidos from new agency

Sir . . . Your April article on Advertising has cartoons about Paris, London, Melbourne, New York, Bonn, Mexico City. And in the Mexican cartoon (see above) is this caption: "Bandidos from a new agency," showing two Mexicans taking possession of someone else's property.

Why does McGraw-Hill insult Mexico?

Valentin R. Garfias
Mexico, D.F.

• *Senor Garfias is being far too sensitive. He, not* INTERNATIONAL MANAGEMENT, *has implied stolen property. The cartoon is but a graphic illustration of a figure of speech used by a Mexican advertising executive to describe a problem — common around the world — of new advertising agencies luring talented personnel from older agencies. He used the term "bandidos" the way an English-speaking ad man would say "pirates." Furthermore, we know of no advertising men who would consider themselves "someone else's property."*—EDITOR

Aging Rapidly?

Sir . . . An apology is in order to the distinguished Dr. Alfredo Navarrete, manager of Nacional Financiera here. In INTERNATIONAL MANAGEMENT's *"The Men in a Hurry in Mexico" May, p17) I somehow raised Dr. Navarrete's age from 37—which he is—to 44—which he is not.*

Peter Weaver
McGraw-Hill World News
Mexico, D.F.

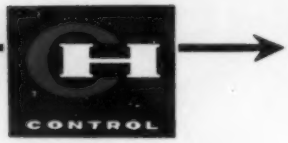
Letter from Ceylon

Sir . . . We are the leading manufacturers of rubber goods in Ceylon, and have recently commenced manufacture of extruded, injection-moulded and blow-moulded plastic goods.

We have found your magazine very interesting and most instructive. As one of the leading firms in Ceylon—with over 1060 employees we are looking for new lines to handle and new small-scale industries to establish.

W. L. Rutnam
Director Richard Pieris & Co., Ltd.
P. O. Box 144
Colombo 2, Ceylon

• *Any interested parties? Write to Mr. Rutnam.*—EDITOR



Contact your closest CUTLER-HAMMER representative for more information

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Egypt—Alexandria, Box 538:
R. Biagini
Union of South Africa—
Johannesburg, Box 584:
R. T. Urquhart & Co. (Pty) Ltd.
Federation of Rhodesia and Katanga Province, Republic of the Congo—
Kitwe, Northern Rhodesia, Box 580
R. T. Urquhart (Central Africa) Ltd.

MIDDLE EAST

Israel—Tel-Aviv, Box 632:
Joseph Roszgold & Co., Ltd.
Lebanon—Bierut, Box 4294:
The United Engineering Co.
Turkey—Istanbul:
Suheyl Decan & Company

FAR EAST

Australia—Camperdown, N.S.W., Box 21:
Electric Control & Engr. Ltd.
Ceylon—Colombo, Box 1061:
The British Electric Co., Ltd.
British Crown Colony—Hong Kong, Box 24: Yu Tung Tai Ltd.
Japan—Ohta-Ku, Tokyo, 36-4,1-Chome, Chofu-Minemachi:
Nippon Automatic Control Company
Korea—Seoul, Box Kwanghwamun 3
Korea Industrial Corporation
Philippines—Manila, 510 Romero Salas, Ermita, W. A. Chittick & Co., Inc.
Singapore—12 South Quay:
Mechanical & Combustion Engr. Co.
Taiwan—Taipei, 93 Chung Shan Road North, Section 2
Wm. Hunt & Co. (International) Inc.

EUROPE

Austria—Salzburg, Franz Josef Strasse 3
Austronik G. M. B. H.
Belgium—Brussels,
34 Rue de L'Association
Bureau Technique International
Brussels 4-62 Rue Joseph II
Metal Industries Europe, S.A.
Brussels 14,
1026-1048 Chaussee de Louvain
Ets. Henkart, Van Velsen & Laqureux, S.A.
France—Montreuil (Seine),
39 Rue Francois Arago, Societe des Comptoirs Imex-France, S.A.
Germany—Munchen,
Nymphenburger Strasse 164
Omni Ray GmbH
Italy—Milano, Box 3988:
Bay & C. S. p A.
Genoa, Corso Andrea Podesta 12-1
Coralma
Netherlands—Haarlem,
Mauritsstraat 5-7
Bureau Technique International
's Gravenhage, Spui 27
Metal Industries Europe, S.A.
Voorburg, Paradysstraat 92,
I. R. C. A.
Sweden—Stockholm, S:t Ereksplan 7
A. B. Impuls
Stockholm, Harjedalsgotan 138
Teleinstrument, AB
Switzerland—Zurich, Dufourstrasse 56
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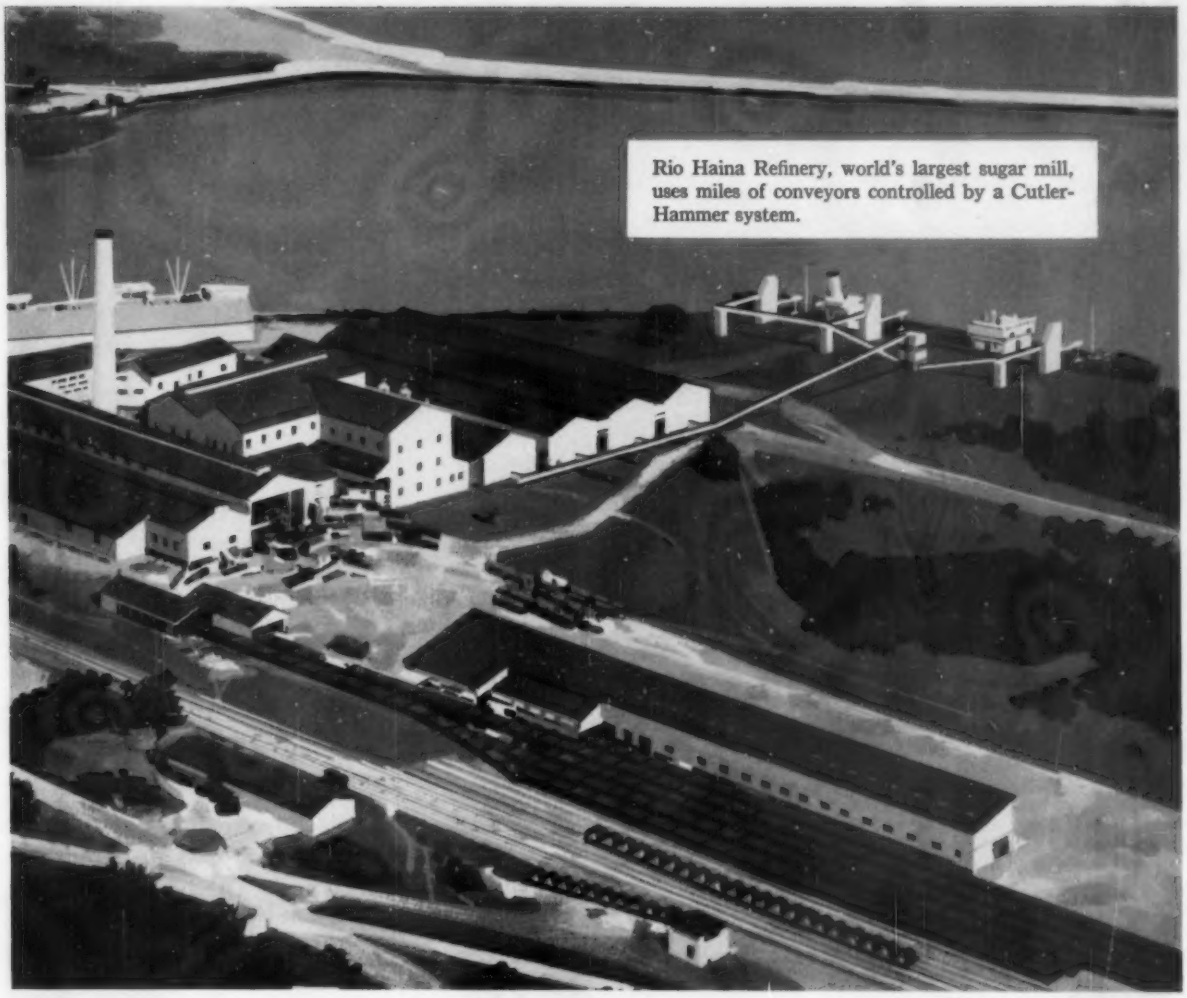
Cutler-Hammer Canada Limited



Rio Haina Refinery, world's largest sugar mill, uses miles of conveyors controlled by a Cutler-Hammer system.

Multi-mile conveyor system or circuit breaker...Cutler-Hammer controls it better!

This highly complex conveyor system, complete with central control panels, moves sugar in bulk from cane crushers and mill through warehouse bins to ship storage. It's one of the world's leading material handling systems, a blueprint for automation in the sixties!

Whether your requirements are for complicated control systems or fine service entrance equipment for home or business buildings, Cutler-Hammer has the products and knowledge to do a better job.

The Cutler-Hammer representative nearest you will be happy to work with you. Call him in early in your planning.

New *Safetybreaker* with modern beauty styling. Superior ambient temperature compensation feature assures accurate tripping in any climate.

WHAT'S NEW? ASK...

CUTLER-HAMMER

Cutler-Hammer International, 270 N. 12th Street, Milwaukee 1, Wisconsin, U.S.A. Cable Address: CUTLER-MILWAUKEE

CONTROL

Facts speak for themselves. This venerable veteran, a truck type Lo 2000, vintage 1934, has covered 1,367,000 miles. No doubt it would have gone on, if Daimler-Benz AG had not bought it back at the ripe old age of twenty-five. Of course not every Mercedes-Benz can have such a long working life. However, all Mercedes-Benz vehicles are built to last, just as much now as they were then, to give many years and many miles of trouble-free, economical service.

75 YEARS OF AUTOMOTIVE ENGINEERING 1886-1961

MERCEDES-BENZ

Common Markets Do Not Come Easily

Of two potentially important trading schemes, one is barely started, the other still a dream. But keep an eye on them.

1. In Latin America: A "Parsimonious" Beginning?

The "moment of truth" is nearer at hand for the Alliance for Progress, the U. S.-Latin American program aimed at speeding development in the Americas. Negotiations just beginning, and decisions taken over the next six months, could determine success or failure.

In this context, the formal beginnings of the Latin American Free Trade Area (LAFTA) in June, following ratification by all seven members, is critically important. For LAFTA demands the kind of intimate collaboration—"give-and-take"—among Latin governments and businessmen that the Alliance (and the U. S. government) seeks. It can mark the end of an era of relative economic isolation that has held intra-Latin commerce to a tiny fraction of the area's total trade.

• **At Work**—Argentina, Brazil, Chile, Mexico, Paraguay, Peru and Uruguay (Colombia, Ecuador, and possibly Venezuela are likely to join too) are sitting down to see how they can eliminate substantially all trade barriers over a 12-year period. They are studying preliminary lists of commodities—mostly raw materials and other bulk products—on which various members are willing to grant trade concessions. There is hope that a few concessions will become operative by January.

But do not compare LAFTA with the European Economic Community or the European Free Trade Area. It is so far a much more conservative, tentative blueprint; it emphasizes planned trade and trade balancing for the sake of each member's national development, rather than calling for all-out competition to see who is the most efficient producer. There are no automatic across-the-board tariff cuts required; there are many "hedges" and various escape clauses.

• **Timid?**—Perhaps LAFTA is not bold enough. Dr. Raul Prebisch, head of the United Nation's Economic Commission for Latin America, says in the current *Foreign Affairs*:

"The seven countries . . . are proceeding with a parsimony which—even though it can be explained by circumstance—could limit the effectiveness of this great enterprise unless they resolve to demonstrate the audacity and determination shown by the Western European countries."

For many reasons, the Latin Americans will not—and probably cannot—move as fast as the Europeans. Conditions in the two continents are a world apart. (Outside suppliers to Latin America can take some comfort: Severe dislocation of their trade directly as a result of LAFTA may be years away.) Yet the idea of broader markets is gradually winning over thoughtful Latin Americans. They hope that once the nettle is grasped and barriers begin to come down, the program will pick up speed.

2. In the Middle East: A Few Halting Steps

Even before the squabbling over the independence of Kuwait, the Arab nations were far from agreement on a regional integration plan. The Arab League Economic Council meeting in Damascus late in June broke up. The 11 states will try again for agreement in Casablanca next month. Their chances, given the Kuwait affair: practically zero.

But businessmen should not ignore the Arabs' halting steps toward closer economic relationships. Arabs worry more about the impact of European and other regional groupings. For all the disunion today, they may have their own "common market" eventually.

• **Bloc**—The problem now is, to be blunt, the United Arab Republic. Backed by the Saudi Arabs, the U.A.R. wants an almost total economic union, complete with common financial, fiscal, investment, labor, and trade policies determined by a majority vote of the members—in short a rigid bloc, controlled by a council in Cairo. Iraq, on the other hand, advocates a more gradual, voluntary, effort to work out joint policies and lower trade barriers.

Clearly Iraq, Lebanon, and most of the others fear the U.A.R.'s rising economic power and President Nasser's theories of state socialism—as well as his political ambition.

• **Some Steps**—Yet inter-Arab trade is growing. And Arabs are making limited progress on joint ventures—

—A $100-million Arab Tanker Co., still on paper but with reasonable chance of success.

—A $47.6-million Arab World Airways, agreed on in principle, but thwarted so far by Lebanese and U.A.R. hopes for their own international carriers.

—A Pan Arab Pipeline Co., shelved so far because of doubts in Iraq and Kuwait.

—An Arab Monetary Fund for Economic Development, capital $56-million, now off to a slow start.

—The latest: An inter-Arab petrochemical corporation, to coordinate the production and export of petrochemical industries now planned by four Arab countries.

For a look at how European integration is faring, turn the page.

Midsummer, 1961: The "Third Europe" is

- **Roadblocks to unity are formidable.**
- **But they will be removed, say businessmen, who are making investment plans accordingly.**
- **Business is good—with luck and good management it can stay that way.**
- **For the distant future, an Atlantic trading community?**

THE SWEDES, liberated by the sun, are splashing determinedly about their beloved archipelago; Danes on water skis are careering down the Oresund behind new outboard-powered boats. Panzers of German campers-out have descended on Italy; the French have evacuated Paris; weekend traffic jams to and from London reach epic proportions. The "rich American tourist" finds he can scarcely command a hotel room at any price. Slightly awed, he realizes that, relatively speaking, he is no longer quite so rich.

Despite the distractions of a newly affluent society in midsummer, the traveler cannot help but see that a new Europe, the "Third Europe," is being born.

In *Towards a United States of Europe*, published posthumously (Hutchinson, London, 1961), R. W. G. Mackay recalls that the First Europe was united under medieval Christendom and insists that the second, the Europe of nation-states, is coming to an end. The compulsion to a new unity is overwhelming.

The signs of the Third Europe are everywhere. You see it in Eurovision TV—an entire continent intent on LeMans racing or the Kennedys and Khrushchevs in Vienna. You see it in technology: The Mesucora (control and automation) show in Paris last May revealed a new "European look" common to industrial equipment from several countries. An intra-European flow of workers becomes a commonplace under the pressure of labor shortage and, quite independently of the Rome Treaty provisions, vacations and work-weeks drift toward a common level. To young people and students, the Second Europe is fading as they crisscross the continent at will (and their rock-and-roll varies hardly a twitch from Helsinki to Milan).

Businessmen in the van

The concept of the Third Europe is taking root in business thinking. In four weeks of discussions with executives in nations of the European Economic Community Six and the Free Trade Association Seven (plus their associate Finland), an INTERNATIONAL MANAGEMENT editor was unable to find one man who was not convinced that the common market and free trade area would come together, and who was not making his business plans accordingly—whether or not he liked the idea.

They believe this even though the EEC, completing its "first stage" this year, is now up against some of its first truly painful decisions. And the question of how Britain and other members of the EFTA can find an accommodation with the Six is a tangle of confusion. The negotiations expected to start this year will be tortuous. British tradition, French ambition, Commonwealth dairymen, Swedish, Swiss, Austrian neutrality, and Germany's pampered farmers are just a few of the roadblocks to unity. But among more and more businessmen, the roadblocks are being downgraded to the status of details, formidable perhaps, but susceptible of solution.

Indeed, many European businessmen are far ahead of the politicians in their thinking. They see quite vividly an all-European trade area, tariff-free (with exceptions, to be sure), embracing 19 nations and some 300-million consumers. The politicians, these businessmen say, must and will work it out.

An Italian manufacturer thinks he will do just fine in the Third Europe. A Finnish banker is confident that the Soviets will agree to his nation's association with a wider group just as they agreed to the EFTA link. "When the time comes, political considerations will not be controlling," says a Swede. "Britain and the others will find a way," echoes a German. And from a British managing director: "Europe is now and will be the most dynamic market in the world. We have no other course but to join in—or become an economic backwater."

The preoccupation with European markets, and the ambitious plans of the biggest companies for pushing into those markets, comes out time and again in conversations with British businessmen.

Indeed, a concentration on markets at home or next-door is noticeable throughout Europe this year. The American who for years has heard the urgent phrases "dollar drive" and "dollar exports" finds Euro-

peans relatively less interested in U.S. markets, and putting relatively less emphasis on sales efforts there.

A little slower business pace

This attitude is a reflection of the thrust and resiliency of Europe's business boom. Most Europeans barely noticed the U.S. recession (only the automakers suffered, and their troubles were as much due to new U.S. competition as to poor business); Europe's traders easily overcame the drop in U.S. purchases abroad. Business in Europe continues good; it is a healthy sign that the pace is a little slower than it has been.

Karl Blessing, president of the German central bank, speaks of the "tranquilizing" effect on prices of the D-mark revaluation. Ruhr order books are slightly less brimming than they have been, and exports are down a bit. The Danes must cool off an economy whose money wages have outstripped productivity gains. The Finns, in the midst of a heroic investment effort (a 33% rise in imports of capital goods in the first quarter), expect some tapering-off towards year-end. Italy, France, and the Low Countries are steady or up. Only in Britain is there serious trouble, and yet another squeeze on sterling is in train.

Britain's problems are perhaps the most intractable and widely-discussed of any leading industrial nation's. What is significant in British thinking this summer is the growing number of English businessmen who see in closer association with Europe the "jolt" and "challenge" that the country needs. "We have got to work harder," says a Londoner, "but given that we can compete with the continentals." And he cited the new industrial elan of the French as an example of what the forces of change and competition can accomplish.

How long can the boom last?

Good business is essential to progress towards integration. How long can the boom last? You do hear murmurs of concern when you ask that question. Broadly the worries fall into three categories:

1. Speculation. Some claim to see evidence of overbuilding. There may be a problem of overcapacity in certain chemicals and plastics, yet more big plants are under way. A German steel man confides that he thinks his company is expanding too fast right now ("How will we sell it all two years from now?"). In some places—Switzerland is an example—real estate prices have reached unprecedented heights, and there is some uneasiness in the share markets.

An American economist might point out that Europeans have always worried about too much capacity—even when their delivery dates stretched out over a year or more. They may have to get used to some excess capacity in expanding, consumption-oriented economies. But the American would agree that a severe blow to confidence might cause a drastic cutback in investment—and trouble would follow.

2. Money. Upward price pressures haunt European policymakers. And nervousness in foreign exchange markets is especially worrisome today. The currency speculator is still a powerful force for disruption—and another crisis comparable to last autumn's "gold rush" might not be easily contained. It is encouraging that the accord between Europe's central bankers, and the support of the International Monetary Fund, has so far helped to steady sterling in a time of strain. But most persons believe that more formal and impregnable monetary defenses must be erected soon.

3. Politics. If the partners fall out and the barriers go up, the Third Europe will be stillborn. But pressure from the East, which shows no sign of relenting, should keep the partners together. Of course if there is war, all is lost. Europeans are trying hard this summer not to notice the shadow over Berlin.

Western Europeans have so far shown great skill in maintaining economic stability in the face of fast growth. If they continue to do so, and political factors do not upset their calculations, the boom has the wherewithal to sustain it for another decade at least. There will be minor ups and downs, leaders and laggards. But the Europeans have the resources and the determination to achieve a standard of living second to none—including that of the U.S.A.

A look across the Atlantic

Encourage a thoughtful European executive to speculate about the more distant future, and sooner or later he will hint at the possibility of a trading system linking Europe with the markets of North America. This is just speculation, he will say, way ahead of its time. But the fact remains that more Europeans are publicly as well as privately looking across the Atlantic toward a wider union.

The prospect may be horrifying to an American manufacturer who may have given the idea even a passing thought ("Look at their low labor costs!"); to some Washington policymakers who are thinking of a preferential trading scheme for the Western Hemisphere ("Latin America is your 'Commonwealth' problem," suggests a Briton); to a protectionist Congressman. Yet there are some foundation piers for an Atlantic bridge in place. One is institutional—the new Organization for Economic Cooperation & Development. Another may be typified by the U.S. manufacturer who gradually begins to think of his California, Michigan, Scottish, and Dutch plants not as separate "domestic" and "foreign" entities but as regional parts of a single business.

It is a long step from a few piers to an Atlantic trading community with common tariffs. And there may be flaws in such a concept, particularly where the developing nations are concerned. But you can be sure there will be deep soul-searching among American businessmen when Britain, its free-trade partners, and the Continent finally find the formula that will unite Europe into the great market. For years the Americans have dinned the idea of wider markets, low tariffs, and unity into European ears. Perhaps the day will come when the Europeans will turn to them and say: "What about you?"

Russians bought as well as looked during the recent British trade fair—termed the most successful ever held in Moscow. Now businessmen in many nations wonder if there is a chance of . . .

More Business With The Soviets?

THIS MONTH, the French take up where the British left off. Eight hundred French companies are setting up their wares in Moscow's Sokolniki Park, the largest French trade exhibition ever put on abroad. And the French have hopes of getting the same reception—and the orders—that the British received during their 17-day stand in Moscow in May and June (IM—June).

Despite the apparently deteriorating political atmosphere between East and West in Europe—Berlin is the crux—optimism about sales to the Soviet Union is growing fast among businessmen. The British came home from Moscow quite excited about opportunities for sales of specialized plant and equipment—and some exhibitors talk of a repeat performance in 1964. Among the onlookers at Sokolniki Park in May were top German industrialists, hoping to profit from British experience for a show of their own. A prominent Indian talks of a trade show for his country in the U.S.S.R. The Japanese, not to be outdone, have invited the Soviets to put on a three-week trade show in Tokyo during August.

• **A Cultural Accent**—The French are highlighting their industrial fair with what they hope is an interesting, sophisticated touch: Books and paintings will be prominently displayed through the fairgrounds, and French movies will be shown in Moscow cinemas.

But French industrialists are in Moscow to sell hardware, and to promote trade and business links between their country and the Soviet Union. The Russians, at the same time, are opening their own trade fair in Paris.

The French will display products of fourteen major industrial areas, among them, machine tools, electrical and electronic gear, agricultural machinery, and mechanical tools.

I. Patents for Progress

Clearly the Russians need more equipment for their forced-draft industrialization. New technology too: Indeed they are now talking about becoming members of polite international patent society. Alexei Kosygin, Deputy Chairman of the Council of Ministers, says Russia is willing to buy patents and accept licenses from the West—and to sell Russian patents to Western industry in return.

It is the quid pro quo that disturbs many observers. The Russians are demanding more opportunities to sell their products. Prime Minister Khrushchev told the British this in no uncertain terms in May: "It [the exhibition] will be a waste of money if you are only going to sell things to us. . . . the more you buy from us the more we will buy from you."

The British were quick to point out, however, that they imported almost £75-million worth of Soviet goods in 1960, against Soviet purchases of only £37-million worth of British products.

As the fair continued, British and Russian trade officials voiced other differences of opinion on the flow of goods between their countries.

—**MFN.** Russia wants to be granted most-favored-nation treatment—but Britain's Board of Trade president Reginald Maudling replied that his country stands to gain nothing from granting treatment to a country dedicated to state-trading, bilateral dealing, and special relationships with a satellite empire.

—**Embargo.** The Soviets want the British to remove "outdated" restrictions on Anglo-Soviet trade—specifically the strategic embargoes imposed in concert with other NATO countries.

—**Petroleum.** Anxious to use its growing oil surplus as international currency to help pay for imports, Moscow insisted the British should agree to give Russian crude oil a share of their home market—say 10% to 20% of the annual growth in demand, for a starter. Maudling's rather abrupt response was that the U.K. has an oil surplus of its own and is not interested.

II. Limited Trade?

Because the British will not accept Soviet crude oil, there seems to be a natural limit on how high Anglo-Soviet trade can go. This is particularly true since the Russians do not want to ship any more gold than necessary, or use sterling balances gained in trade with other countries.

Still, there is considerable optimism among businessmen that ways will be found to increase Anglo-Soviet trade.

Last month, the Russians had an exhibition of their own in London which gave them ample opportu-

nity to promote sales of commodities other than oil. And government and business in Britain seems willing to help a Soviet sales effort. One British trade official feels the U.K. might have to buy unneeded Russian goods with the object of reselling them, and develop "intensive market research" to help uncover markets in Britain for Soviet goods.

III. "Fair" Play

Although trade negotiations between the two countries are uncertain, British businessmen found their Soviet counterparts extremely interested in the goods they had to offer, and ready to buy. The British announced a handful of contracts totaling more than $28-million during the fair, and many more contracts were in negotiation when the fair ended. Exhibitors generally conceded however that the fair itself could not be credited for major contracts: Almost all were negotiated beforehand. British trade officials do believe, nevertheless, that the fair "will generate more business than first expected." As the fair closed, the pace of buying increased so much that the British sold almost all that they brought with them.

The consumer goods industries were present in force, seeking contracts for household goods, shoes and other clothing, toys and autos. But major emphasis was on such industrial goods as machine tools, food processing equipment, and machinery for the textile, chemical, electronics, electric power, and communications industries.

• **Complaint**—While official Russian comment of these products was overwhelmingly favorable, there were rumblings that some items shown did not reflect the "most recent" British technology. But in at least one case, a British firm turned down an offer to buy a specialized piece of equipment and packed it up to ship home. "Why let them copy it now?" was the explanation.

In general, the British found the Soviets are not so interested in standard industrial equipment—they can make that themselves. What they are looking for is modern, accurate, highly productive machinery which can be operated by less-than-skilled labor. ●

The man from Monsanto knows 20 ways to say functional fluids

In hydraulic fluids, he can talk about Pydraul*, the Monsanto industrial hydraulic fluid that's so safe, it won't ignite even when accidentally discharged over flame! Skydrol*, the Monsanto fire-resistant hydraulic fluid for aircraft, has a 10 year perfect service record. Coolanol* 45 is the most widely used dielectric-coolant in complex electronic systems. Pydraul AC is a straight synthetic lubricant that essentially eliminates the basic cause of compressor fires and explosions.

These are among the 20 Monsanto functional fluids your Monsanto man can directly relate to your specific requirements. For additional information, write to Monsanto Chemical Company, Overseas Division, St. Louis 66, Missouri, U.S.A.

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Monsanto

MONSANTO FUNCTIONAL FLUIDS: Pydraul synthetic hydraulic fluids; Pydraul AC synthetic air compressor lubricants; Skydrol aircraft hydraulic fluids; Coolanol 45 coolant-dielectric fluids; Aroclor* fire resistant heat transfer agents; Biphenyl and Santowax* nuclear reactor moderator-coolants.

MUELLER BRASS CO.

one dependable source for quality products for air conditioning, refrigeration, plumbing and heating

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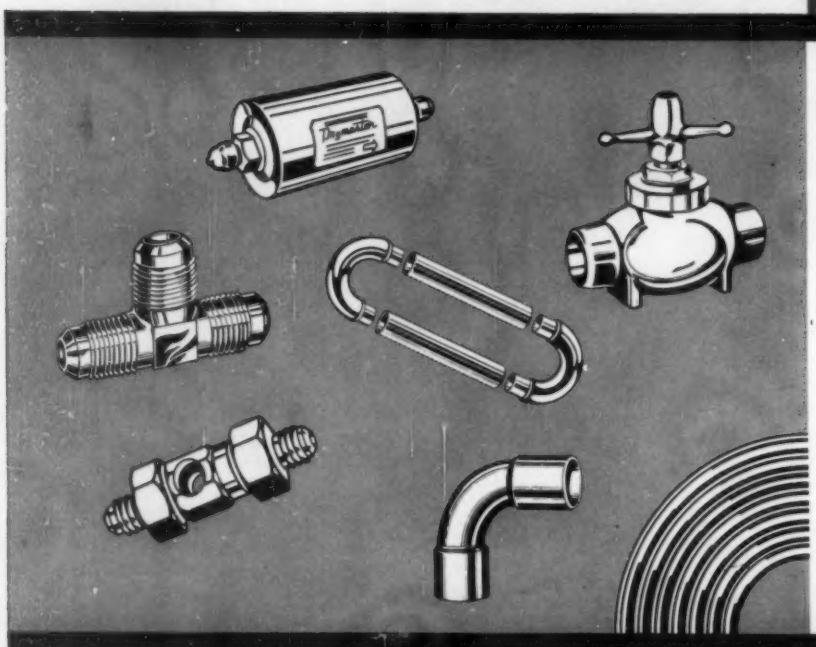
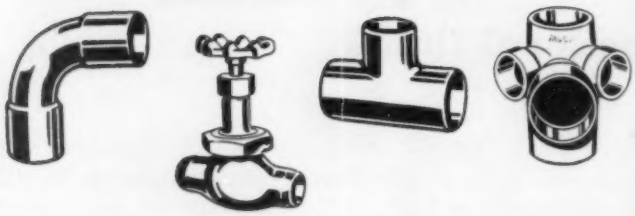


refrigeration and air conditioning products

The Mueller Brass Co. offers high quality components for virtually every refrigeration and air conditioning need, including: Drymaster Filter-Driers, Linemaster Diaphragm Valves, Globemaster Packed Valves, Solder-Type or Flare Fittings, Vuemaster Liquid-Moisture Indicators, and Streamline bright, clean Dehydrated Tubing . . . also precision Return Bends as well as Heat Exchangers, Manifolds and Service Accessories.



plumbing and heating products

Streamline copper tube, solder-type fittings, valves and accessories are the industry's highest quality products in design, material and workmanship.

formed copper tube and assemblies

Mueller Brass Co. supplies formed copper tube and assemblies to customer's specifications. Complete facilities for swaging, bending, spinning, upsetting, flaring, flattening or sealing, beading and grooving, drilling, piercing, machining, joining . . . all at consistently close tolerances.

321

MUELLER BRASS CO.

Port Huron 43, Michigan, U. S. A.
Cable address: Streamline

GENERAL INFORMATION

For sugar and paper mills, breweries, distillers and other industrial applications, Mueller Brass Co. copper tubing is supplied to customer's specifications. Mixed groups of items can be packed for delivery to different job sites for any customer, eliminating rehandling costs.

American Steel Men Look Overseas

They are determined to compete in the world. Armco's Johnston (right) shows how it can be done.

"By the mid-1970s foreign steel consumption may well be 250-million tons greater than in 1960. We cannot hope to participate satisfactorily in this growing market through exports alone. The demand abroad will be met primarily by foreign producers. If we are to have a proportionate share of this market, we must get inside it and become a part of it."

Addressing the American Iron & Steel Institute in New York some weeks ago, Logan T. Johnston (cover picture), president of Armco Steel Corporation, presented this as the "greatest challenge" facing the mighty U. S. steel industry today.

• **Receptive**—Johnston undoubtedly found a receptive audience. U. S. steelmakers have every reason to be preoccupied with competition from overseas. More than the progress of aluminum, concrete, and plastics, the postwar revitalization of West European and Japanese capacity has hurt the industry badly and turned the country's export surplus into a deficit. After 27 months of deficit that averaged 1.4-million tons a year, the best American producers can see this year is an export-import balance.

Look at the figures. Last year alone, Japanese steel output rose a spanking 33%; India's, 26.5%. Continental Western Europe production jumped 16%, British output 20%. The world market is surging, and it is just in the past few years that the Americans have appeared more determined to play a part in it, and at the same time meet competition in their domestic market through the vigorous marketing of new products and the development of new production and inventory techniques.

"Whether they like it or not," says Logan Johnston, "U. S. steelmakers compete in an international market."

• **Pioneer**—Armco itself is a good example of President Johnston's thesis. One of the country's leading steel producers (it came sixth in steelmaking capacity last year and fourth in revenues), Armco probably has done more kinds of business, in more world steel markets, and for more years, than any other U. S. producer.

Logan T. Johnston

The company's first excursion abroad came in 1912, when it received an order from Brazil for corrosion-resistant culverts. The end product—Armco Ingot Iron—was almost the company's first specialty product. By 1913 Armco was shipping sheets to Brazil for fabrication there. What began as an export venture rapidly evolved into an international steel company. Today, all Armco operations outside the U. S. and Canada, with one exception, are handled by Armco International Corp., which has 41 sales offices and 39 warehouses overseas.

• **Licenses**—Soon after its foreign venture, Armco began licensing its products and processes abroad. Armco had organized the first research department in the steel industry in 1910, and soon developed new products and processes, including some of the industry's most fundamental. Ingot Iron, for one, not only made possible a huge and profitable domestic and export drainage products business; it was also found to be superb for enameling sheets. This opened substantial structural markets.

Silicon-bearing electrical sheets were the first research project. Later the company developed the first grain-oriented silicon steels, an important new electrical material. In 1924 Armco perfected the first continuous wide sheet mill, which made possible the all-steel automobile body. Today 45% of all steel products flow from descendents of its original wide hot mill.

Besides licensing such developments, Armco International now operates 13 manufacturing plants in 11 countries. Some get their raw material from Armco, some buy it abroad. With three exceptions, the foreign plants are wholly-owned. Armco shies away from joint ownership abroad.

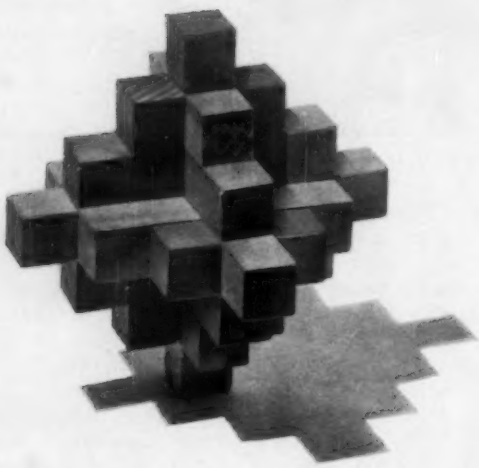
If men like Johnston recognize a severe test ahead in foreign competition, it is not a prospect that frightens them. They are diligently studying ways to penetrate the overseas market, through subsidiaries, joint ventures, and by selling their experience to foreign mills. There are many problems here, and there are others at home.

• **Costs**—The chief problem, as they see it, is production costs, which are lower outside the U.S.A.

Another is pricing: One investigator believes the most serious decline in the U.S.A.'s international price advantage is in steel. Prof. Emile Benoit points out in his recent book *Europe at Sixes and Sevens* (Columbia University Press, New York, 1961, $5) that in 1953 U. S. steel prices were roughly comparable with those in Europe. By 1959, says Benoit, European prices had dropped "some 15% to 30% below the U. S. price on the Continent."

Yet another fundamental difficulty is in pricing policies. American steelmen adhere to the doctrine of the single price. This means their operating rates vary with demand at the desired prices.

Most foreign steel companies load their mills as close as possible to capacity, then price to sell the product in both domestic and export markets. It is this pricing conflict that makes the U. S. a prime target for any European or Japanese mill that has capacity to sell. And over the next five years,



Profits a puzzle?

In seeking a solution to the profit puzzle, more and more businessmen are turning to Japan. Many are becoming aware of how profitable it is to trade in this country that offers a growing variety of quality products finding ready markets.

Many of these products are manufactured by companies in light and heavy industry that carry the Three Diamonds mark. These are Mitsubishi companies, all represented in foreign trade by their big general-trading partner, Mitsubishi Shoji.

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they may have a great deal of extra capacity to sell.

As IM went to press, however, U. S. Steel Corp. and Kaiser Steel Corp. made a move to reverse this one-price-to-all system by withdrawing their published prices on exports of certain semi-finished goods. The intention behind this is presumably to negotiate prices separately with individual buyers.

• **What to Do?**—Armco and its fellow producers are determined first to lower costs. In 1962 they will be bargaining with labor for a contract in which employment costs do not rise higher than productivity. And they are spending over $1,000-million on research into cost reduction. Some domestic cost reductions have been accomplished with new technology. Foreign producers, for all their advantages, will have to hurry to keep up with the research-based productivity of the better U. S. producers.

The 1960 revolution in the inventory practice of U. S. steel buyers affords the industry an important advantage. Now that steel is in plentiful supply, steel users have abandoned their practice of filling their warehouses with steel; instead, the producers now carry the inventory for their customers. To meet this situation, overseas producers will have to stockpile their steel in the U. S. if it is to compete with overnight mill shipments.

Another new market development that constricts imports is the nature of the product. On standard sizes and gages of conventional carbon grades, the American producer is hard-pressed on prices. But increasingly, U. S. steel users are demanding "specification material." They need a better product. This is forcing producers to sell exactly the kind of quality and service their customers want.

• **Lush Market**—U. S. steelmakers also have an advantage when it comes to raw materials — probably a 5% advantage over Europeans, twice that on Japan. But one of the most hopeful signs for the industry is the amazing growth of the European market. American producers cannot believe that they will be shut out forever from this market—and others—whose growth so much exceeds that projected for their own. (*Business Week, May* 20, *p*157)

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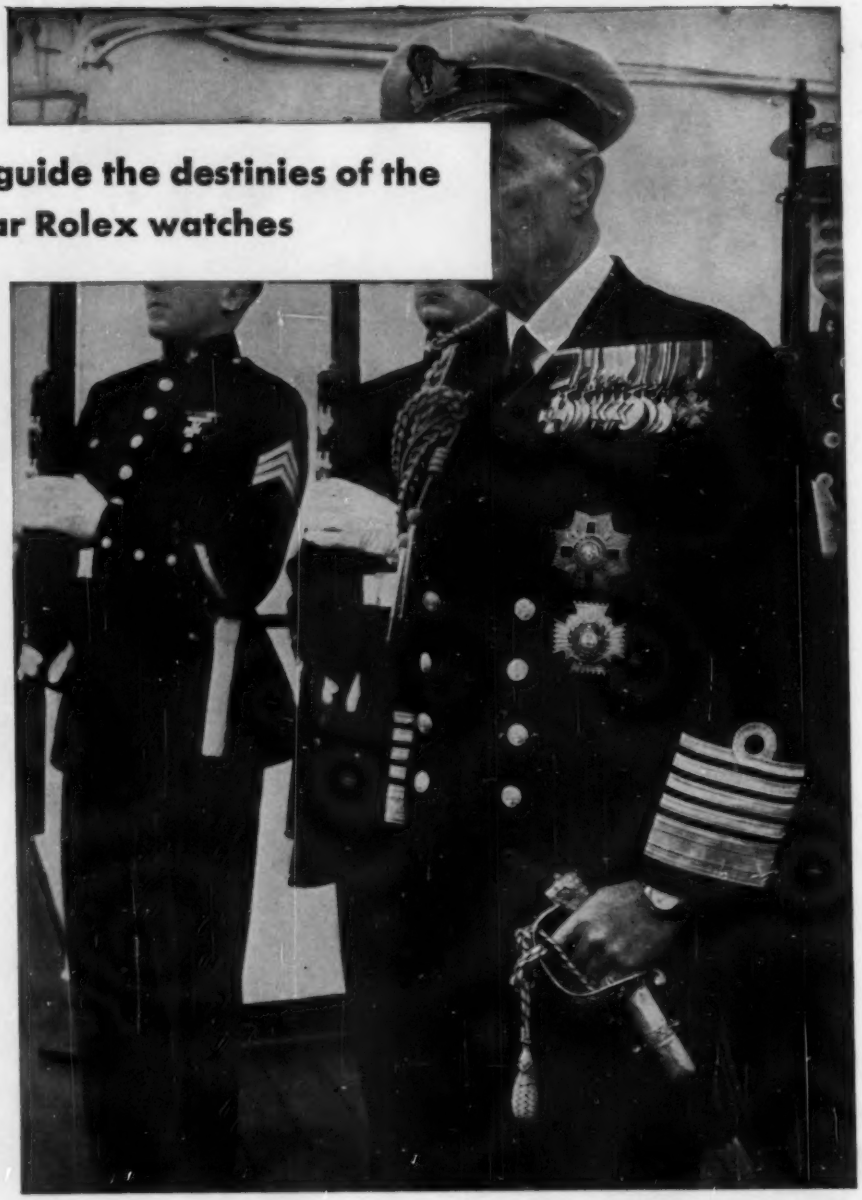

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Seven Keys to Improved Handling

EVERY MANUFACTURER, whether he makes plastic toys or steel locomotives, sooner or later learns one cardinal rule: Shaping a product, molding it, machining it, hammering it, polishing it, all add value to a product. Picking it up and laying it down does not.

A second cardinal rule is that an improvement in materials handling methods is almost invariably the quickest way to trim productive costs. In that handling adds no value, its minimization must eventually bring down costs—and add to profits.

This simple but important premise underlies "Management Guide to Productivity," a study recently completed by engineers of U.S.A.'s Yale & Towne Manufacturing Co. and Professor James R. Bright of the Harvard Graduate School of Business Administration. The book offers management seven basic ratios for analyzing their materials handling costs and cutting down unwarranted expenses. These ratios are based on analytical procedures used by Prof. Bright in training materials handling specialists at the Industrial Management Center, Lake Placid, New York, which he has headed for several years.

Some of the formulas have been stated before. But they have been put together in the "package of seven" shown on these pages as a convenient aid to management in its "quest for higher profits through greater efficiency."

• **Typical Savings**—Each of the measures has been tested in the field by materials-handling engineers. They report these typical savings:

—A manufacturer of oil-well equipment cut costs $18,000 a year by improving his shipment and inspection of bar stock.

—A warehouse increased its work output 100% by better communications between the space-control supervisor and the crew of fork-truck operators.

—An electronics manufacturer was able to cut his materials handling payroll in half.

Itemize and total all Material Handling Labor costs, then find the ratio of these costs to total payroll.

Example

MH Labor Costs:		
1. Equipment labor	$118,600	
2. Activities labor	48,700	
3. Share of joint labor	50,300	$217,600
Total payroll (excl. sales & admin.)		2,400,000

$$\text{MH Labor Ratio} = \frac{\text{MH Labor}}{\text{Total Payroll}} = \frac{217{,}600}{2{,}400{,}000} = 9\%$$

1. Too Much Labor?

The MH Labor Ratio above aims at finding out how much labor a given plant devotes to materials handling, and how closely it conforms to general practice.

Ratios for different industries will vary widely, the study notes, depending on the type of product, the degree of automation. In metal-working manufacture, for example, 5% would be extraordinarily low, while 40% would be extremely high. A ratio of 20% usually indicates opportunity for improvement. The 9% shown above normally would indicate that a company was doing a pretty fair job.

Prof. Bright and his associates suggest that this ratio be used as a "bench mark or a starting point for before-and-after studies, or as a basis for comparison of plants in your company or . . . industry."

Working along this line, a big electronic company found that 56% of its payroll in 13 plants was being spent for materials handling. An aggressive campaign brought the figure down to 25%.

Direct Labor Handling Loss (DLHL) is a guide to labor effort that is being lost because skilled men are doing unskilled handling. Study jobs that combine MH and other labor in a typical mix. Evaluate what percentage of Direct Labor (other than work feeding) is spent on handling. Then apply this percentage to total wages to get the money value of time lost.

Example

$$\text{DLHL Ratio} = \frac{\text{MH Time Lost by Direct Labor}}{\text{Total Direct Labor Time}} = \frac{100 \text{ hours}}{400 \text{ hours}} = 25\%$$

Total Wages of $300,000 × 25% = $75,000 DLHL

2. Skilled Labor Wasted

Are highly skilled men unknowingly being used for pushing material around, rather than for their primary jobs? Do available equipment and techniques free direct workers for their skilled work?

The Direct Labor Handling Loss (DLHL) ratio throws light on these questions. The study can be either an informal spot check, or a detailed description of the handling work done by each productive worker.

An effort then will be made to find out what factors cause handling loss by direct labor. Does the handling system deliver parts to the right spot? At the right height? In the right containers? A DLHL ratio of 15% or more is normally considered a warning that skilled labor is doing too much handling.

continued overleaf

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This ratio examines the relative efficiency of your handling system—the number of moves for a given productive operation. First step is to walk through the shop counting moves, then divide by the number of operations (in this case, assembly and inspection):

Movement/Operation Ratio = $\frac{\text{Number of Moves}}{\text{Operations}} = \frac{17}{2} = 8\frac{1}{2}$ to 1

3. Too Many Moves

Workers in many factories move materials unnecessarily. Every time an item is picked up and laid down it adds to cost.

A ratio in this field is arrived at by an actual count of the moves of workers and machines. The moves then are totaled and divided by the number of operations.

The 8½ to 1 ratio in the example is high and unreasonable, according to the experts. A 4 to 1 ratio is a good target for a job shop; a 3 to 1 ratio, for conveyorized systems.

Manufacturing Cycle Efficiency compares the time required for productive work with the total time spent in the factory. The minutes and hours spent on each operation is tabulated and totaled, then divided by the elapsed time from start to completion of an order.

Example

Production Operations: Machining..... 4 hr 10 min
Heat treatment..... 1 hr 25 min
Inspection..... 10 min
Packaging..... 7 min or, 6 hr

Elapsed time: 12 days and 5½ hours, i.e. 101½ working hours

Manufacturing Cycle Efficiency = $\frac{6}{101.5} = 6\%$

4. Is Time Wasted?

How quickly and efficiently does a factory put materials through the required processes? Is there unnecessary waiting?

Answers come by computing the Manufacturing Cycle Efficiency (MCE) — the relationship between the time required for productive work and the elapsed time while a job was in the factory.

This ratio gives management another tool with which to examine costs and productivity. Is the manufacturing cycle slow? If so, what factors are holding it up?

Very few shop operations show a MCE of 10%. Some plants have ratios of less than 1%—that is, a product is worked on less than one hour for the 100 hours it is in the shop. Better production control, communications, and handling may effect a cure.

To find out whether production equipment is being utilized to its full potential, its actual output is compared with its theoretical capacity.

Example

A key stamping press has theoretical rating of 60 pieces an hour, or one piece a minute.

A study of production records over the previous 4 weeks shows that the press produced 6,240 pieces in 9,600 running minutes. Hence:

Equipment Utilization = $\frac{\text{actual output}}{\text{capacity}} = \frac{6,240}{9,600} = 65\%$

5. Full Use of Equipment?

Other factory losses result from equipment that is not being used to its full potential.

As with other ratios, equipment utilization varies from company to company, from industry to industry. Prior to automation, many automobile plants were happy with efficiencies of 60%. Now they get 80%. And some textile plants attain up to 95%.

A low equipment utilization ratio may come from a wide variety of causes: slow supply of material to a station; improper feeding or removal of parts; inadequate handling equipment; breakdowns and inefficient maintenance.

continued overleaf

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Seven Keys to Handling—(continued)

Space Utilization Efficiency is a comparison of the space available and the space usefully occupied. First, determine Net Usable Cube by multiplying the interior width, length, and height of the building and deducting unusable space—e.g. columns, elevators, required clearances. Then calculate space usefully occupied.

Example

Total interior space (15 x 30 x 5)		2,260 cu m
Unusable:		
6 columns (.7 x .7 each)	3 sq m	
2 washrooms (4 x 3)	24 sq m	
office space (12 x 6)	72 sq m	
door clearance	50 sq m	
Total	149 sq m	
149 sq m x 5 m (height)		745 cu m
Net usable cube		1,515 cu m
Space usefully occupied (1,424 sq m x 5)		712 cu m

$$\text{Space Utilization Efficiency} = \frac{\text{Usefully Occupied}}{\text{Net Usable Cube}} = \frac{712}{1515} = 47\%$$

6. Is Space Properly Used?

Unused warehouse space also is costly. Many managers think of their plants as full, when they are merely "cluttered," or "chaotic," to use Bright's words.

To get a true picture, you compare actual space used with net usable space—after deducting cubic meters taken up by obstacles and factors beyond your control.

Space Utilization Efficiency varies from industry to industry, from one kind of a warehouse to another. Many new warehouses attain an efficiency of 60%, though the figure is lower when a large number of small items are handled. But almost any factory or warehouse will improve its space efficiency once it has given attention to the problem.

To get your Aisle Potential, two factors must be compared: (1) Current Aisle Space, (2) Theoretical Optimum Aisle Space. The last factor can only come out of a study of what size trucks are required—and for what part of the storage area.

Example

Current Aisle Space	
Central aisles (120 meters of 3.5-m width)	420 sq m
Others (450 meters of 3-m width)	1,350 sq m
	1,770 sq m
Theoretical Optimum Aisle Space	
Central aisle for big trucks (10 x 3.5-m)	35 sq m
Side aisles for big trucks (45 x 3-m)	135 sq m
Other central aisles (110 x 3-m)	330 sq m
For narrow-aisle trucks (400 x 2.1-m)	840 sq m
	1,340 sq m

$$\text{Aisle Potential} = \frac{\text{Current Space minus Optimum}}{\text{Current Space}} = \frac{1770-1340}{1770} = 24\%$$

7. Too Much Aisle Space?

Extravagance in aisle space often comes from poor organization of a plant or warehouse—chaotic mixture of big and little items in storage—and lack of knowledge about the kind of handling equipment now available.

Many of the industrial-truck manufacturers have developed trucks that can operate in aisles two meters or less in width. Valuable space can be saved by reducing aisle width wherever heavy loads are not stored, and using the new narrow-aisle trucks now being made by several manufacturers.

The Aisle Potential tells you how much of your current aisle space can be saved for storage or production—in the example, 24%.

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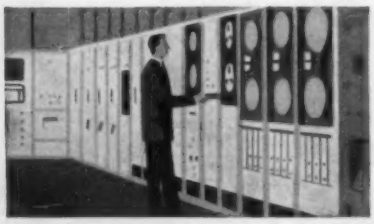

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Big Jobs for Small Turbines

Gas turbines are more competitive as materials and systems improve.

A NEW GENERATION of small gas turbines is on the way—and soon may be going into light aircraft, luxury and utility cars, as well as trucks and military vehicles. Note these three U. S. developments:

Williams Research Corp. soon will be testing a slightly heavier version of its 10-kilo turbojet (picture, right) in a quarter-ton Jeep-type wagon.

Continental Motors Corp. has introduced a 95-kilo, 500-hp unit, which it says will be going into executive jet airplanes in 1963.

Mission Mfg. Co. now is packaging a line of 30 to 850 hp gas turbines aimed primarily at stationary jobs—sand blasting, rock drilling, power generation—but with a great deal of versatility and promise.

These developments point up the unique advantages of the gas turbine—and the problems ahead. The chief advantage of this power source is its compactness and simplicity. Major problems are rooted in the unit's specialized materials and machining, and the resultant cost.

• **Simplicity** — Unlike the reciprocating engine, the gas turbine contains no pistons, no valves, no camshaft, and only a rudimentary ignition system for start-up. An elaborate lubricating system is not needed, because all major bearings are aligned along one shaft. And aircooling eliminates radiator, hoses, pumps, thermostats.

The gas turbine, in fact, is basically a single moving part: a fan mounted on a shaft. Air is sucked into a compressor, mixed with fuel, then ignited to form hot gases that whirl the turbine blades and shaft.

Such simplicity not only means reduced operating and maintenance costs. It means increased reliability. Some of the new small turbines, for example, are expected to run 5,000 to 20,000 hours between major overhauls.

The gas turbine also offers the most power per kilo of engine, and the best fuel economy at maximum load. But it has a related disadvantage: poor economy at partial load. Recent progress in gas turbines has been aimed at correcting this fault, and shrinking initial costs by eliminating some of the expensive materials and craftmanship that used to go into making turbine parts.

PRES. WILLIAMS (right) and an aide look over their 10-kilogram gas turbine.

• **New Alloys**—Williams, an enneering firm that normally designs and builds prototypes on order, has found a number of new ways for cutting costs and increasing efficiency. In its 10-kilo unit, designed especially for small planes, Williams uses a turbine fan completely cast from cobalt alloys, in place of forged blades that used to be separately inserted in a ring.

In its newest turbines, Williams tries to increase efficiency with a compact, rotating heat exchanger. This unit siphons off normally wasted exhaust heat to raise the temperature of the incoming air.

• **Fewer Parts** — Continental claims that it is using far fewer parts in its new T-72 than would be used in larger and heavier turbines. The 95-kilo gas turbine is kept down in weight—and price—by extensive use of aluminum and magnesium.

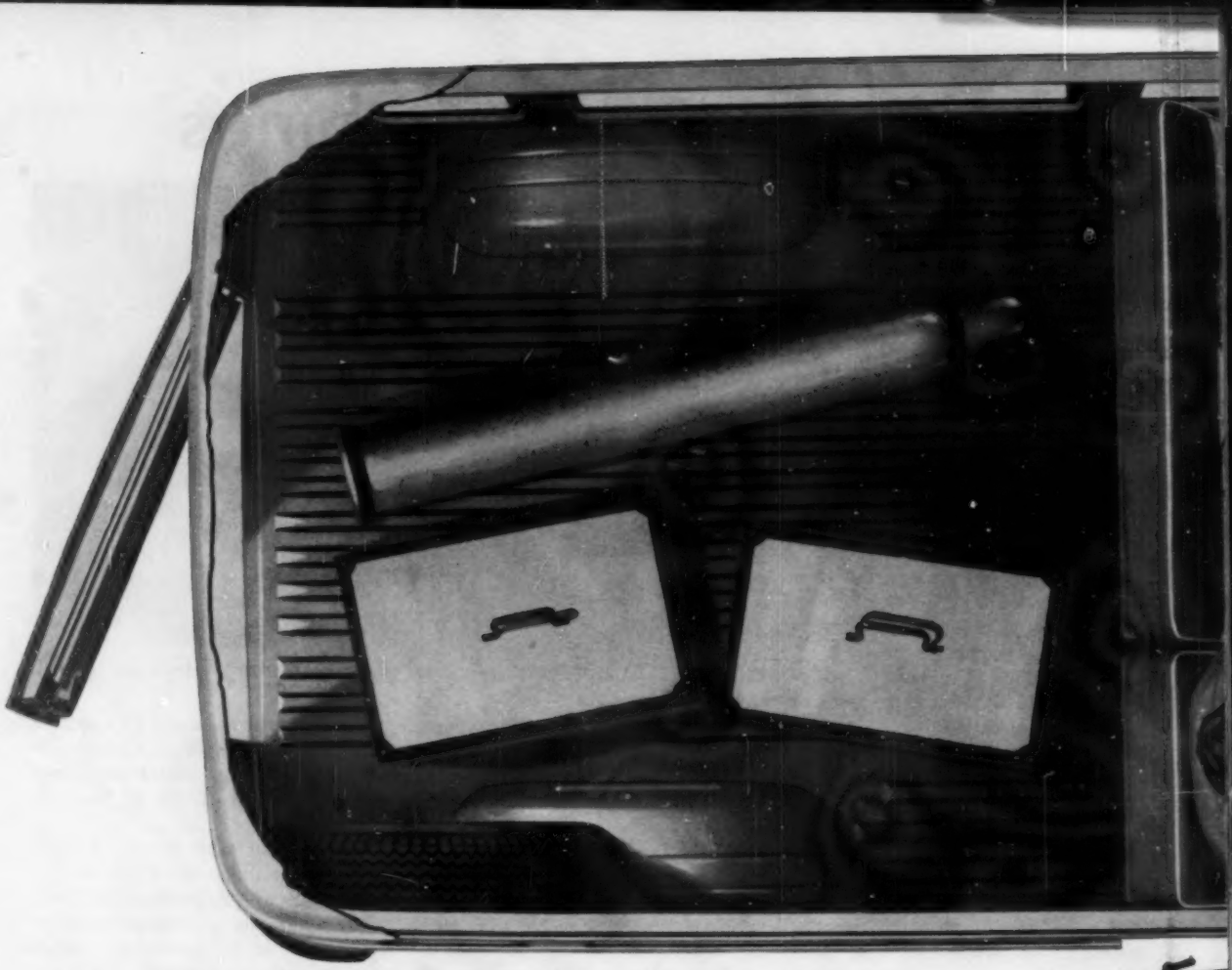
The company estimates that the price will range from $15,000 to $17,000, compared with the $50,000 to $60,000 for other turbines in the same power class. The engine is only half a meter in diameter, a little more than a meter long, and consumes about .3 kilo of fuel per horsepower hour.

Continental says it can be used either as a turbo-shaft engine for helicopters or—in combination with a propeller—as a turbo-prop for a five- to eight-passenger, twin-engine business aircraft.

• **Quick Power** — The Mission packaged turbines claim peak efficiency in a matter of seconds after start-up, and dependability under conditions of extreme heat or cold. In older systems, hot intake air often decreased efficiency.

The basic Mission package consists of a heat exchanger, operating controls and safety devices, beside the gas turbine made by AiResearch Mfg. Co., a division of Garrett Corp. The units often are skidmounted for easy transport. The 30-hp unit is said to be the smallest turbine offered as standard equipment.

These turbines can produce energy either in the form of compressed air or shaft power. As compressors, they can power rock drills, sand blasters, pavement breakers. As an activated shaft, they can be used to power a wide range of machines, stationary or mobile. *(Product Engineering, June 26, p 58; Chemical Engineering June 26; Business Week, June 17, p 89)*



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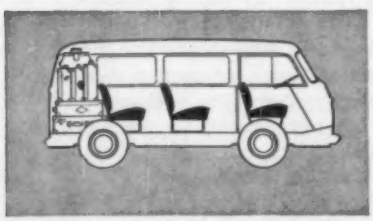

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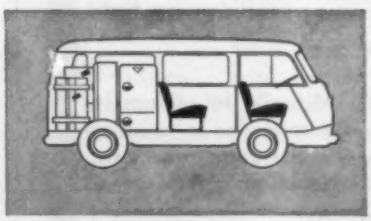
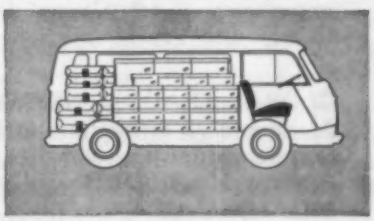


5 persons +
1779 or 1367 lbs. load



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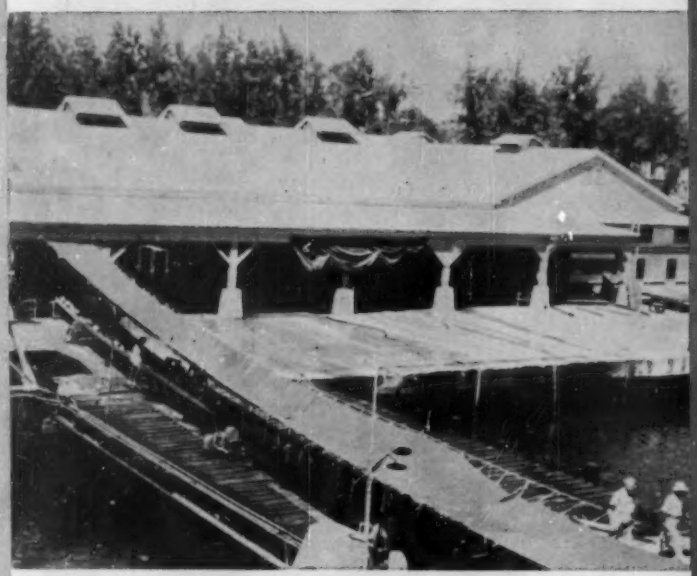

Since 1957, more than 12,000 tons of frozen tuna meat were shipped to the U.S. and France from these New Hebrides fishing facilities—the result of a joint venture between Mitsui and local industry.

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Irish Take to Freeze Drying

A SMALL PLANT in Mallow, Ireland, soon may be opening up new horizons for freeze-dried food. The five-ton/day plant, recently installed for the Irish Sugar Co. Ltd., uses an improved technique—known as Accelerated Freeze Drying (AFD)—developed by researchers of the British Ministry of Agriculture, Fisheries and Food. It is being made available, in Ireland and elsewhere, by Vickers Ltd. of London.

• **In Eight Hours**—Vickers says that AFD cuts batch production down to eight hours, compared to the 24 hours required by some processes. This can make freeze drying profitable for many products besides the soups and stews now on the market—such items as steaks, fish, most vegetables and fruits.

Freeze drying basically is a method of swiftly dehydrating food, so that a large part of the nutrients and flavor is retained. The food is frozen, then heated in a vacuum so that the ice turns directly to vapor. When properly packaged the freeze-dried food remains "fresh" at room temperatures, as long as it is kept free from moisture.

With the AFD technique, the initially frozen food goes into a cabinet between sheets of metal mesh. The air is rapidly evacuated from the cabinet. Heating plates are put in close contact with the food, then brought to a temperature of about 140 C. Thermocouples in the food control the drying process.

• **AFD Packaging**—Food is packaged as soon as possible, using a dry nitrogen or carbon dioxide packing system. The package must exclude oxygen and be opaque. It also should be fairly rigid, because the food is brittle.

Food processed by the AFD technique retains more of the fresh flavor, Vickers technicians say, because fewer of the salts are removed. Though most foods can be freeze-dried, large items must be sliced or chopped for best results.

Freeze-dried food is expected to give year-round sales to Ireland's seasonal agricultural products. And Irish Sugar's marketing efforts—will be closely watched by

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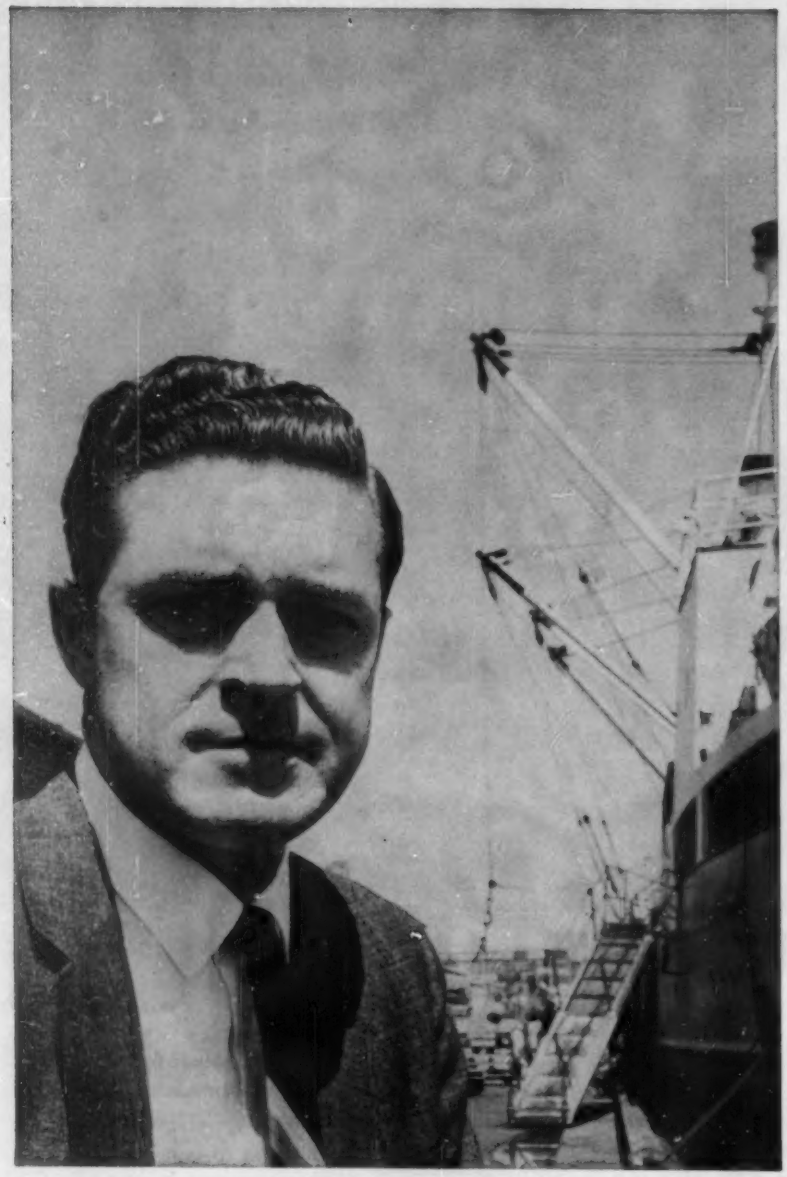

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others interested in freeze-drying technology — equipment makers such as Germany's Leybold-Hochvakuum-Anlagen GmbH and the U.S.A.'s F. J. Stokes Corp., as well as the world's food-processing companies (IM—Mar. '60, p27).

Initial output at the Irish plant will go in bulk quantities to institutions, who already have ordered most of the first year's supply. But consumer packages will be on the market within six months. ●

New System Trims Desalting Costs

ANOTHER CONTENDER in the competitive sea-water conversion race has appeared in Japan. Like two other promising contenders—U.S.A.'s Carrier process and Israel's Zarchin process (IM—Feb. '60, p32)—the new system separates water from salt by freezing. And it claims to be a shade cheaper than either of the older processes—as low as nine cents per kiloliter, compared to the ten cents claimed for the Zarchin process.

The new process was developed by Shiji Umano, chief chemical engineer of Japan's Chemical Industries Research Institute. A plant in Japan using the process has been turning out 200,000 liters per day of fresh water.

Unlike other freezing processes, the Umano process uses a secondary refrigerant, boiling butane or isobutane. There is a big advantage to this, reports *Chemical Week*. A relatively light vacuum is needed, simplifying the problem of recompressing the vapors.

• **Double Circuit**—In essence, the Umano process is designed around two circuits of recycling hydrocarbons. The first, using hydrocarbons in the distillation range of gasoline, absorbs heat from the incoming sea water. The second, either butane or isobutane, boils in contact with concentrated brine and freezes the water to pure ice.

The dual system cuts costs in several ways. Low pressures and temperatures allow the use of concrete, cast iron, and other cheap materials. Small compressors are used. And since cooling is done by direct contact of liquids, no problem of metal descaling arises.

From orange grove to breakfast table . . . Clark's Tools of Mobility serve the citrus industry

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Oranges don't grow on palmetto plants, and this Clark-built MICHIGAN tractor dozer (above left) is busy uprooting palm trees and other tropical "weeds" to make room for a new orange grove. The sandy soil, ideal for oranges, eats up the tracks of crawler-type equipment. Clark's rubber tires couldn't wear less.

Clark-built Ranger lift trucks (above) scoot in, out, and between the crowded tree rows with loads of the ripest, hand-picked fruit. Their speed and maneuverability assures same-day processing (at nearby plants) to preserve the true orange flavor and nutrition.

This Clark fork truck runs hot and cold hauling perishables from sunny loading areas to the cold-storage warehouse. A few minutes' delay can mean expensive spoilage. Punishing service, but routine duty for Clark's Tools of Mobility.

To market, to market . . . a few days ago an orange ripened. Today the juice of that orange, quick-frozen to retain its nutrition and flavor, is on its way via a Clark-built BROWN trailer to your breakfast table. This is typical of the way Clark's Tools of Mobility have helped revolutionize the mass distribution of goods.

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MANAGEMENT

How to Organize Staff Functions

A PHENOMENON of American industry in the past two decades has been the proliferation of staff as compared to operating functions in the factory. So much so that one knowledgeable international executive told INTERNATIONAL MANAGEMENT that "The Americans may have too much staff, but most manufacturers in Europe and elsewhere do not have enough." He adds: "Perhaps there is a happy medium?"

The Editor of *Factory* magazine, Mr. Lester Bittel, would probably disagree—he finds that the complexity of modern industrial technology demands more staff experts. But he points out that there is no such thing as a "standard' staff organization in U.S. industry. The staff function has grown in response to specific needs.

After a study of a number of manufacturing plants, ranging in size from a 150-man pipe mill to a tire factory employing 4,300, Editor Bittel has attempted to collate some consensus of staff organization. The charts at right he calls an "oversimplified shorthand" —a guide to common usage.

• **Defining Duties**—Bittel says that progressive companies, small and large, go to considerable effort to describe all the duties that might be performed under a function. Next, they group like responsibilities into logical arrangements. Only then are the problems of staffing considered. And only then are compromises made in matching men and assignments.

Bittel's charts can be used as a starting point in organizing staff services. In the case of materials management and manufacturing engineering, the charts represent a trend that is growing in popularity, but is by no means universal. In the case of plant maintenance and engineering, the chart offers one solution to the vigorous debate over whether plant engineering (construed by many as a design function) and plant maintenance (usually viewed as upkeep and repair) should be under separate direction or combined under one man.

Some sort of basic line-and-staff arrangement now prevails almost without exception in U.S. manufacturing plants, in Bittel's opinion. He says that new staff specialists, such as data processing experts, are finding more acceptance and more jobs to do.

• **Small Plants**—In small, well-run plants, staff managers often perform two or more functions. Some managers have several duties within a function, others handle more than one major function. Sometimes the duties of a single function are split between two managers who have other functions as their primary responsibilities. Or all engineering functions—industrial, plant, and manufacturing—might be combined under a single man. But the type of manufacturing problem has much more influence on organization than plant size. ●

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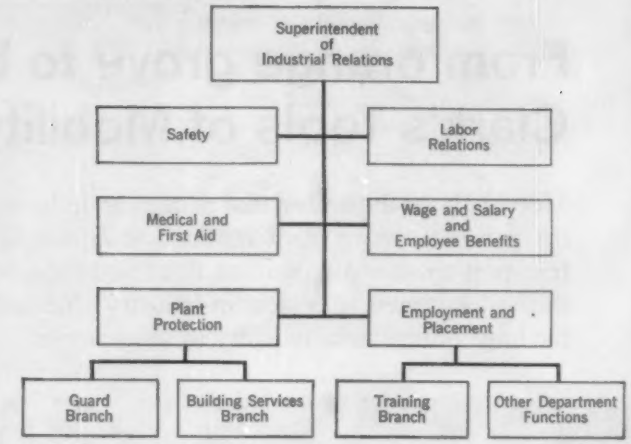
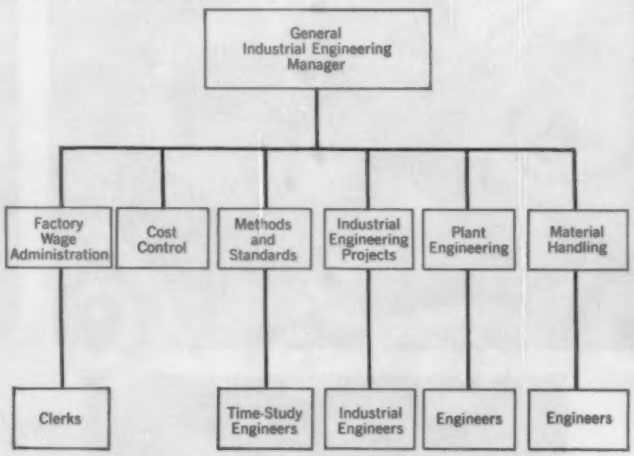


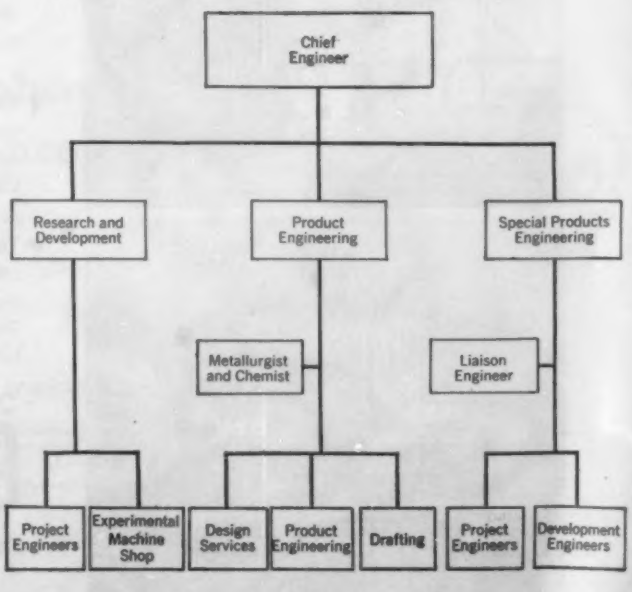
Industrial Engineering

...Applying techniques to men, methods, and machinery



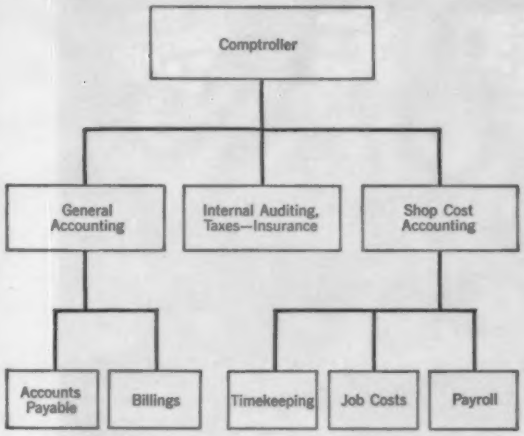
General or Product Engineering

...Abdicating plant-level activities to other staffs



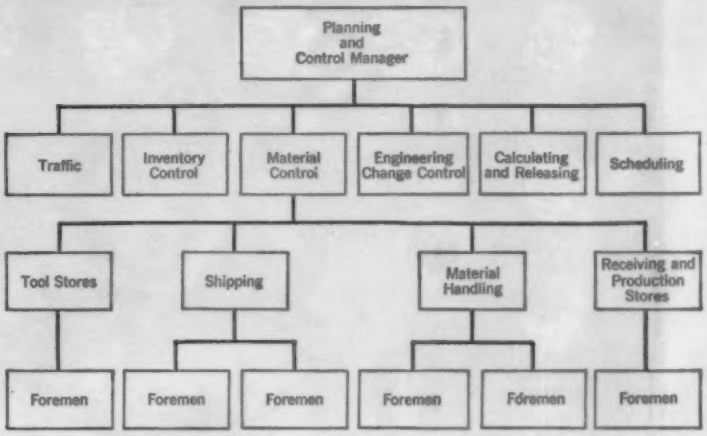
Budgets and Cost Control

...Becoming more shop-oriented



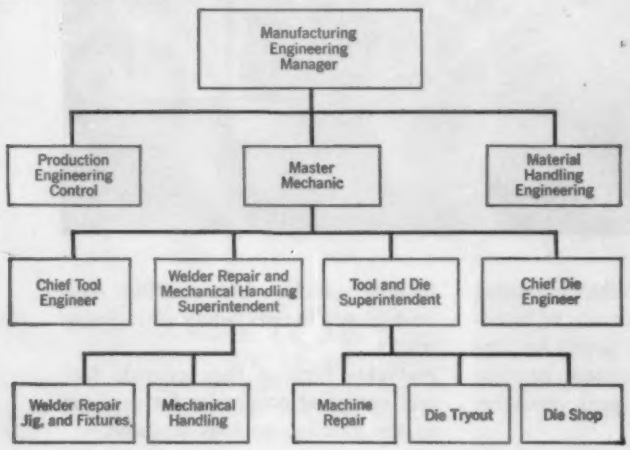
Planning, Production, and Inventory Control

...Penetrating deeply into plant organization



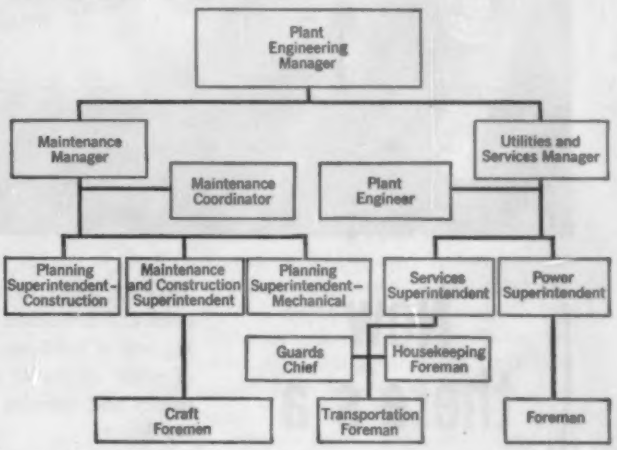
Manufacturing Engineering

...Specializing in process equipment design and utilization



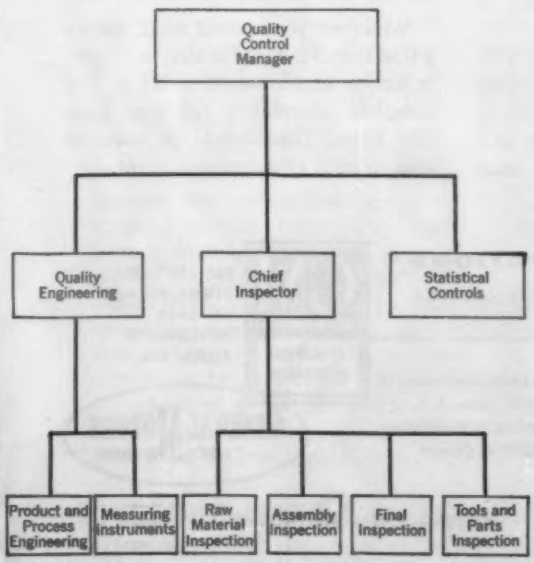
Plant Maintenance and Engineering

...Status being granted this small but growing group



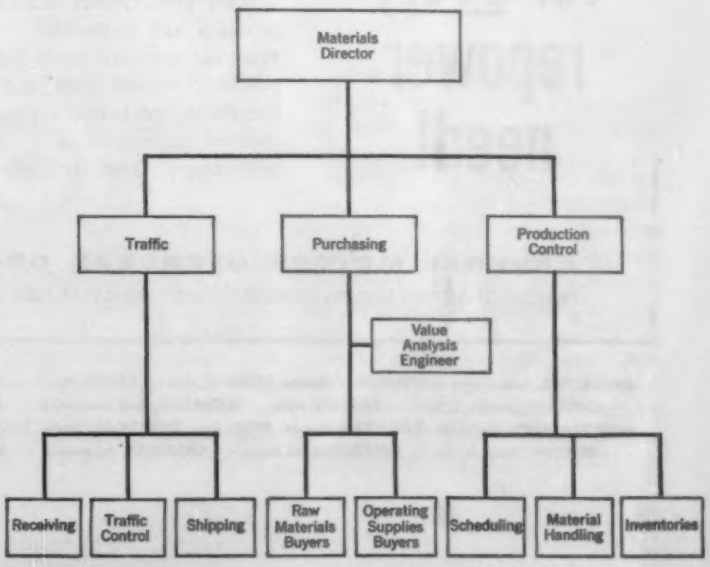
Quality Control

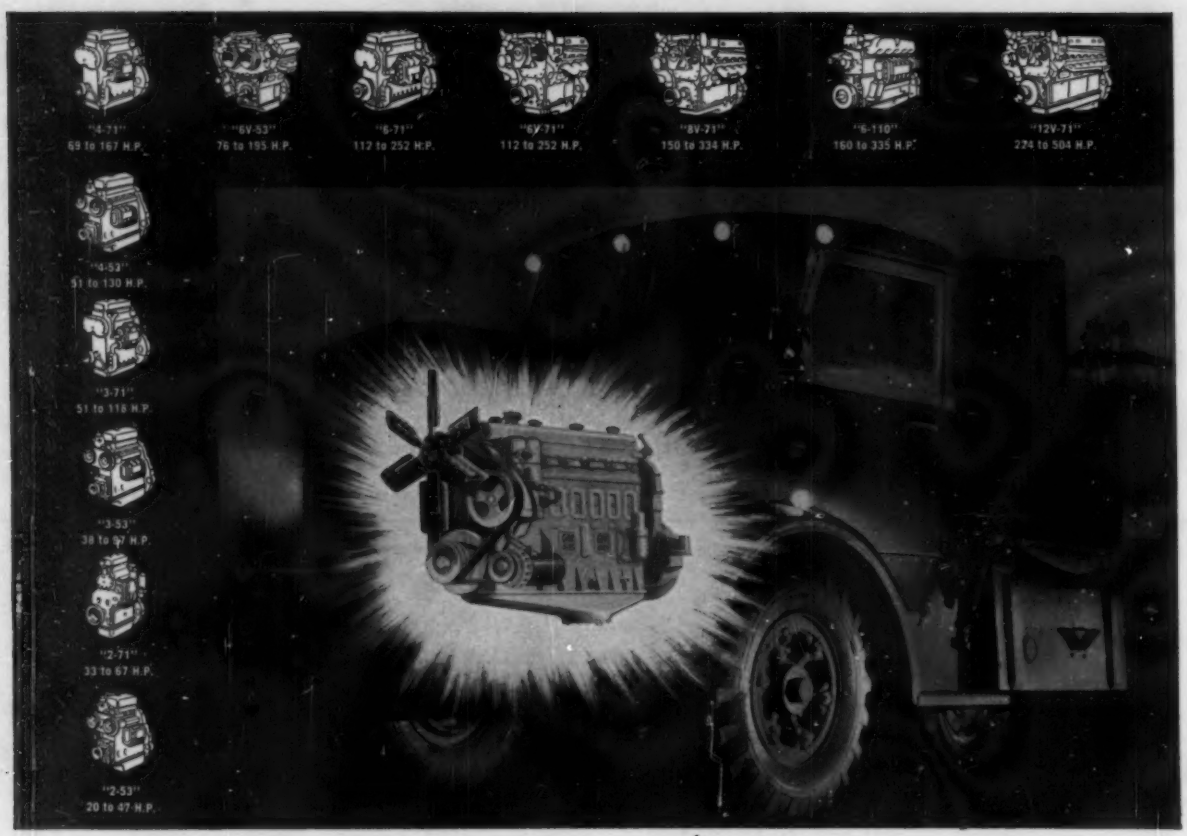
...Reliability giving new boost to inspection and statistical controls



Materials Management

...A new face, more important task for purchasing





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GENERAL MOTORS LOCOMOTIVES

Problem for management and government:

Can Retraining Supply Skilled Labor?

Program for displaced workers at Belgium's abandoned coal mines shows new jobs can be learned—but only by a few.

WHILE EUROPEAN MANAGEMENT is facing a critical shortage of skilled workers, a surplus of unskilled or semi-skilled labor continues to mount—in North America, Africa, Asia, and even in parts of Western Europe. And management as well as government is looking hopefully at retraining as a possible solution to the problem.

Many of the jobless never were trained. But many are persons whose jobs have been wiped out by technological change or by the shrinkage of marginal industries in the face of new competition sweeping the world. This is especially true in the industrialized nations, where the displaced worker is fast becoming a severe political, economic, and social problem affecting business and government alike.

• **Supply?**—Retraining of the displaced worker has been mainly the responsibility of government. But industrial management has an important stake in the matter. Once retrained, these unemployed may be a partial source of supply of badly-needed skills.

In the U. S. for example, the Administration of President Kennedy has launched an ambitious program of manpower training and development—to cost $700-million over four years—to retrain those persons who have lost out, even in healthy industries, because they lack the necessary skills.

The business of retraining is heavy on theory but light on actual practice. So businessmen and government officials everywhere may learn something from the experience of Belgium in retraining coal miners of the Borinage district. The mines formerly employed more than 25,000; today only 11,000 miners are at work and 2,000 more are scheduled to be fired by 1965.

While the Borinage program is limited to coal miners, it remains one of the most systematic retraining efforts available for study. Recently McGraw-Hill's *Business Week* took a careful look at the results. Those results—so far at least—are not particularly encouraging.

• **ECSC**—When the mines were closed in 1956, the High Authority of the European Coal-Steel Community in cooperation with the Belgian government drew up plans to retrain those who were capable of and willing to be retrained. Then the government began the problem of developing new industry in the Borinage, and work was started to improve railroad, highway and canal facilities. An industrial park was begun which, when completed, will house a glass works, a corrugated container factory, a brewery, and a cellulose factory. The jobless miners were and are now being trained in skills required in the construction projects.

At Maisieres, three schools trained masons, carpenters, and plumbers—12 to 15 of each at a time—with the courses averaging six months in length. Recently a month's refrigeration training was added to the plumbing course at the request of a local refrigerator firm.

At Jemappes, the buildings of an abandoned coal mine became a school for diemakers for the glass works. The course lasts a year and the school has a capacity of 10 "students."

The very newest plan calls for students to be transported daily to the glass company's old works at Momignes for schooling as machinists and checkers for the new works. Three-month courses will train a total of 55 workers.

The Mons labor office also met a request for 25 blow-pipe cutters by retraining 25 miners.

• **Experience**—Officials estimate the cost of the retraining program so far at $26,500—out of a total bill of $2-million spent by the High Authority to ease the aftereffects of the Borinage mine closures.

Belgium's experience at the Borinage showed the serious limitations of retraining. It found that the age barrier was the major obstacle to effective retraining. After 35, it is a rare miner who can be retrained for anything else, Belgian officials concluded. They also found that experience in some other trade greatly increased the retraining potential, even if the trade were completely unrelated to the new skill to be acquired. Also, if a miner had been employed in a mine job above the ground, his chances of benefiting from retraining were improved.

To date, only 100 workers have been retrained, and this small percentage of the 7000 who lost mine jobs pretty well exhausts those interested in and capable of retraining.

But Belgium does not feel the retraining program was a failure. On the contrary, it proved to be a success as far as it went—but pointed up the fact that retraining is not a large-scale solution, at least among miners. Retraining helps only an "elite" group. But for this group, Belgians say, it has proven to be a very worthwhile solution.

The security of the rest of the Borinage ex-miners depends on the continued availability of unskilled jobs, and not on retraining for highly-skilled labor.

• **Some Hope?**—As business and government gain further experience in retraining, its effectiveness will increase.

Retraining on a large scale is not successful in the Borinage, but coal miners—and Belgian miners are no exception—are a clannish lot, who regard mining as a way of life and are loath to leave their homes for better work. This probably makes them among the most difficult to retrain.

Already, the dynamic atmosphere of the European Common Market is increasing the mobility of labor; similarly, British workers are slowly becoming more mobile and adaptable to different lines of work.

Young people in many lands are receiving a better education—which makes them more receptive to retraining efforts in the future (*Business Week, June* 17, *p*73)

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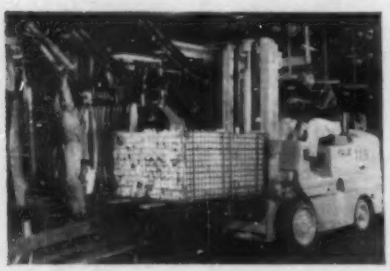

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Purchasing Men: Unite!

EUROPEANS believe their seven-nation purchasing association has proved the value of a world-wide organization. John Blinch, who retired in May as head of the British Purchasing Association (to set up his own consulting business) explains the need for an international "clearing house:"

"Business is becoming more and more internationalized. And that has a number of implications for purchasing agents.

"For one thing, as international agencies and international agreements proliferate, purchasing agents need a unified voice to speak for their mutual interests.

"Another is that buyers themselves have become increasingly mobile, and the trend will be accelerated in the future—partly because of the continuing liberalization of trade."

• **Clearing House** — Moreover, Blinch notes, an exchange of ideas, techniques, information between national groups can be of great value. An international association can be the clearing house for such an exchange. The Management Committee of the European association, composed of national purchasing groups in Belgium, France, West Germany, the Netherlands, Norway, Sweden, and Britain, expressed its approval of an international association at a meeting in Oslo in June.

According to McGraw-Hill's *Purchasing Week* magazine, the only deterrent to a world-wide organization seems to be a reluctance on the part of American purchasing men. The Canadian association, on the other hand, has shown considerable interest in joining an international body.

A committee of the U.S.A.'s National Association of Purchasing Agents (NAPA) is now studying the question, and a report is expected to be made at the NAPA executive committee meeting next autumn. Apparently, there is some fear that actions taken by a world-wide group—such as standardization—might be incompatible with systems that are widely used by purchasing departments in the U.S.A. ●

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ALITALIA AIRLINES

Smaller Firms Look Abroad

SMALLER U. S. companies are becoming more interested in doing business overseas. This is a conclusion of a survey by the American Management Association.

Questionnaires were sent to 700 "smaller-than-large" companies, 327 companies replied. Of these, 208 reported some sort of foreign business—201 had an export business, 70 had licensing arrangements, 35 had wholly owned subsidiaries, 28 had one or more joint ventures. Of the 28 with joint ventures, 18 reported the percentage of ownership: 7 reported minority holdings, varying from 10% to 49%; 5 reported 50-50 arrangements; 6 reported majority holdings, varying from 51% to 90%.

• **Comments**—While profitability of overseas as compared to U. S. business is hard to measure, executives who commented said their foreign business was either more profitable, or offered profits through licensing that were not otherwise obtainable. One executive said his foreign business made the difference between profit and loss last year. And several also pointed out that cross licensing provided them with profitable products for the U. S. markets.

Two chief executives said they use licensing fees and royalties to buy equity in their licensee companies. This gives them a voice in the licensee company. This is considered important "for quality control and product service" and also "to avoid setting up a future competitor when the licensing agreement expires." Two presidents noted that licensing involved "little investment" while protecting their competitive position.

• **Just Beginning**—The AMA concluded that many smaller U. S. companies are just beginning to seek foreign business. Non-manufacturing companies are also looking overseas, especially if they have special "know-how."

Several presidents said they are aggressively pursuing new opportunities abroad; and several said they were making on-the-spot surveys this summer in search of distributors and licensees. ●

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PAINT, VARNISH, AND PLASTIC—Naphthenate Driers and other Metallic Soaps (Linoresinates, Octasols, Resinates, Soyates)—Cadmium Lithopones—Pigments—CP Cadmium Pigments—Mercury Cadmium Pigments—Antimony Oxide—Organic and Inorganic Dry Colors and Dispersions—Vinyl Stabilizers.

ELECTROPLATING—Nickel Salts: Sulfate, Chloride, and Carbonate—Nickel Anodes—Cadmium Oxide—Bright Nickel Electroplating Processes.

CATALYTIC PROCESSING—Preformed Catalysts—Boron Trifluoride—Hydrofluoric Acid—Nickel Formate—Rufert Nickel Catalyst Flakes (for vegetable oil hydrogenation).

MISCELLANEOUS—Hydrofluoric Acid—Ammonium Bifluoride—Miscellaneous Fluorides—Copper Chloride—Copper Oxide—Copper Naphthenate—Cobalt Sulfate and Carbonate—Manganese Carbonate—Cadmium Oxide—Synthetic Crystals (Optical, Scintillation, Electronic).

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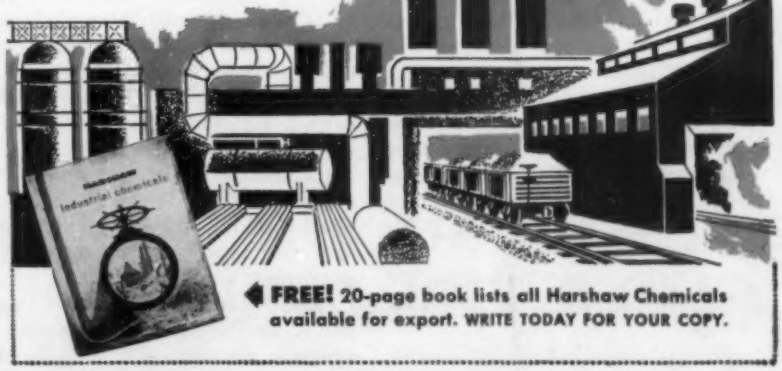

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1 **Reducing distribution points from 100 to 25 saves..... $1,460,000**

number of warehouses	% of market within 1-day delivery	% of market reached in 2 days	annual transportation costs	inventory investment	inventory cost at 22% of investment	handling & paper work	total distribution cost
100	99%	100%	$1,847,000	$14,418,000	$3,172,000	$1,281,000	$6,300,000
50	96	100	1,934,000	11,423,000	2,513,000	953,000	5,400,000
25	90	100	2,082,000	9,079,000	1,997,000	771,000	4,840,000
17	81	97	2,211,000	8,004,000	1,761,000	724,000	4,693,000
5	33	86	2,632,000	5,475,000	1,205,000	638,000	4,475,000

How "Hypo Co." Saved $2.9-Million

"Hypo" is hypothetical—but its approach to distribution costs can be a realistic and practical tool for management.

IT IS NOT the size of the $2.9-million savings that is most important in this analysis of distribution costs. Rather it demonstrates that distribution is a total operation, an integrated system, in big as well as small companies, anywhere in the business world.

The Hypo Co. was created by W. Clay Hill, a marketing specialist at the U.S.A.'s General Electric Co., and became known through the pages of *Business Week* magazine. Hill was concerned about the tendency of management to look at distribution in bits and pieces—transportation men looking only at transportation costs, factory people thinking only of manufacturing, sales people worrying only about customer complaints.

• **Hypo Co.**—Hill defined his mythical company as having sales of $50-million a year, composed of 500,000 units selling for $100 each. Its plant is centrally located in the U.S.A.'s Midwest and serves 10,000 customers scattered across the country. The company ships 1,000 different items, but none of the products are specified. "The logistics of distribution," Hill says, "is the same whether you are shipping refrigerators or lamp bulbs."

The problem is to balance service with costs. In making his analysis, Hill used conventional methods of distribution. He did not consider electronic data-processing (which would give even greater savings) but he paid close attention to modern transportation and communications.

As the analysis shows, a business can often save greatly on transportation costs by shipping in bulk from factory to numerous warehouses, then reshipping to nearby customers. The reason is that freight rates are usually set that way. But as an offset to such savings, you must consider the costs of inventory, handling, and paper work.

On the other hand, you can store products in central warehouses, keeping inventory and handling costs to a minimum. Then you risk making the customer unhappy because of slow delivery. Yet even with a hundred warehouses, you cannot guarantee one-day delivery. So it becomes a matter of finding a point at which you meet the demands of most customers and beyond which you are adding to your costs without significantly improving service.

• **Policy Decision**—Where is this point? To Hill, it involves a management decision. For his Hypo Co., Hill decided on rendering a "90% customer service level." Assuming that customers want one-day delivery, this means that 90% of customers would receive shipments the day after their order is received (the remaining would get delivery on the second day). With 25 warehouses, Hypo could provide this service.

Hill decided, however, that risking customer dissatisfaction on certain items would pay handsome dividends. Chart 3 shows a breakdown of a typical warehouse sales pattern according to the widely used "A-B-C-D" inventory categories—on the basis of fast-to-slow volume and turnover. By stocking C and D items at only five warehouses, Hill makes a considerable saving. And he still provides third-day delivery on these items.

• **Lesson**—After his study, Hill concluded that a company could actually cover the U.S. market with 25 distribution points at most. "And that applies to any product," adds Hill.

In national markets smaller than the U.S.A., the number of distribution points might be correspondingly lower. But the "Hypo" analysis and the approach to marketing that it represents can be extremely useful, especially at a time when larger regional markets are fast taking shape. ●

2 Cutting warehouse replenishment time from 25 days to 10 days..... $811,000

	Before	After
Order frequency	14 days	1 day
Communication time	3 (mail)	1 (Teletype)
Factory processing	8 days	8 days
Replenishment time	25 days	10 days

Inventory needed		Inventory carrying costs
25-day cycle	$9,079,000	$1,997,000
10-day cycle	5,392,000	1,186,000
Inventory cut	3,686,000	

3 Stocking slow-moving C & D items in only five key warehouses..... $146,000

	% of total items	% of dollar sales	% of dollar inventory
A items	5%	72%	44%
B items	10	16	23
C items	15	8	17
D items	70	5-10	16

	inventory investment	distribution costs
All items stocked at each warehouse	$9,079,000	$1,997,000
A and B items stocked at all points; C and D items at five points only	8,182,000	1,851,000

4 Accelerating manufacturing cycle from three weeks to one week..... $506,000

	needed factory inventory	inventory carrying costs
All items made every three weeks	$3,970,000	$873,000
All items made every week	1,670,000	367,000

Total Savings . . . $2,923,000

An Advertising Man Speaks Out

In April, International Management reported that advertising is misunderstood by many businessmen throughout the world. An amplification of our report is offered here by an advertising man—call him "Madisonius"—with wide international experience.

TO SOME, the image of the American advertising man is that of a super-salesman in a gray-flannel suit, of "flexible" ethics, taking clients to three-martini lunches for conversations that are glib and one-sided. Is this an accurate picture of the thousands of executives, researchers, writers, media experts, and other specialists who make up the advertising business? Certainly not!

But does it matter to businessmen thousands of kilometers away from New York's advertising row, Madison Avenue? Quite a bit. The advertising man is just as readily found walking along Market Square in Helsinki or crossing the Luneta in Manila. He is *not* exclusively an American invention. Yet wherever he is, whatever his tongue, when he talks advertising he speaks with an overtone of Americanese, so great is the influence of U. S. experience on mass marketing.

INTERNATIONAL MANAGEMENT'S report on advertising (April, 1961) detected an undercurrent of resentment against advertising in many nations. Many people think of it as an American invasion—led by "hucksters" and "hidden persuaders." It is more accurate to say that advertising today—American in conception or not—is as international as ice cream.

IN MANY NATIONS, a full-blown "consumption economy," dependent more and more on advertising, is just now appearing. In this hour of need, what can be done about advertising's poor image? The first step is to clear up some of the confusion. The reputation of advertising is not so much damaged as still emerging. After all, the modern, full-service advertising agency is only a few decades old, and in many places is still struggling to win its place as a service to management.

Historically, advertising has been the businessman's own business: what to say, how, when, and to whom. While many companies still exercise this privilege, the trend is toward the use of outside specialists. The need for expertise grows with the acceleration of competition, new products, marketing innovations, population shifts, and the proliferation of advertising media. Thus the modern agency fills a need that goes beyond placing an advertisement or even the designing of advertisements to a client's order. It can be the essential partner in marketing decisions.

If advertising men need a defense of their role, they have only to quote these words of Walter Bagehot, the 19th Century British economist: "Our current political economy does not sufficiently take account of time as an element of trade operations . . . time is of the very essence. First . . . goods . . . should be exchanged as quickly as possible. Secondly, every producer . . . should always be able to find, without effort, without delay, and without uncertainty, others who want what he can produce."

An advertising man might reduce Bagehot's words to "creating demand." And he could argue that this gives advertising a clear economic purpose.

THE U. S. ADVERTISING PROFESSION, conscious of the many brickbats being hurled at its activities, is currently engaged in a campaign to explain advertising's role in selling goods. Yet despite all the criticism there is, in fact, a general acceptance of advertising in America. In a survey of public opinion last year, only 17% was generally unfavorable to advertising, against 55% that thought it was fine.

Another survey of people with influence in the community—educators, businessmen, writers, clergymen, etc.—showed that even the "intellectuals" and "influentials" recognize that advertising plays a useful economic role. But when it came to advertising techniques, the survey told another story. One out of every three businessmen criticized some advertising on grounds of ethics and taste. Television advertising came in for scathing attacks: "obnoxious junk."

The point is that U. S. businessmen make a clear distinction between the purpose and the practice of advertising. This is a distinction that advertising people themselves do not always make.

MANY BUSINESSMEN outside the U.S.A. are deeply skeptical of both the purpose and practice of advertising. There is some evidence that they too confuse the two. But in the long run, their skepticism may be good medicine for advertising.

Harry Henry, a research specialist for a British advertising agency, says that the high quality of market research in Europe "is due to the cynical and hard-headed attitude of the European industrialist." The European businessman, Henry says, takes a good deal of convincing of the need for research and of the validity of the findings. "What is more, he does not commission research unless he intends to use it."

Henry could just as well have been talking about advertising per se. If advertising is considered by some a marginal activity, it is because they have not become convinced of its value. Partly this is because in past economies of scarcity they did not feel they needed it, partly it may be because of the shoddy practices of some practitioners and advertising media.

For it is certain that businessmen in many nations have not yet applied the thorough-going "hardheadedness" that characterizes their approach to production, finance, and research to the problems of advertising. Once they do—and there are signs that they are beginning to—advertising's image will come into focus.

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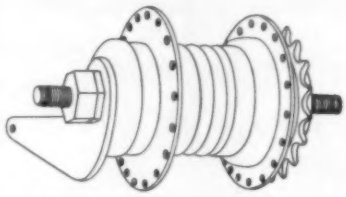
What is Good Design?

These five out of nine winners of a U. S. industrial design contest provide some answers to the classic question. Entries were judged for their function and sales appeal, and the efficiency and cost of their production. *Product Engineering* magazine conducted the contest.

Planisphere: Special honors went to this brain surgery instrument, the combined product of engineer, designer, and surgeon. Designed for the treatment of Parkinson's disease, the planisphere enables the surgeon to locate a precise point within the brain before operating on the center of the diseased area. The instrument is attached to the patient's head by means of a lock tapped into a small hole in the skull. The Plexiglas dials provide a means of triangulation for pinpointing the affected part of the brain. Among other requirements, the instrument had to be lightweight and easily sterilized, and made of a material that would allow the passage of an X-ray beam. It was manufactured by Knox Instruments Inc. of Seattle, Wash., U.S.A.

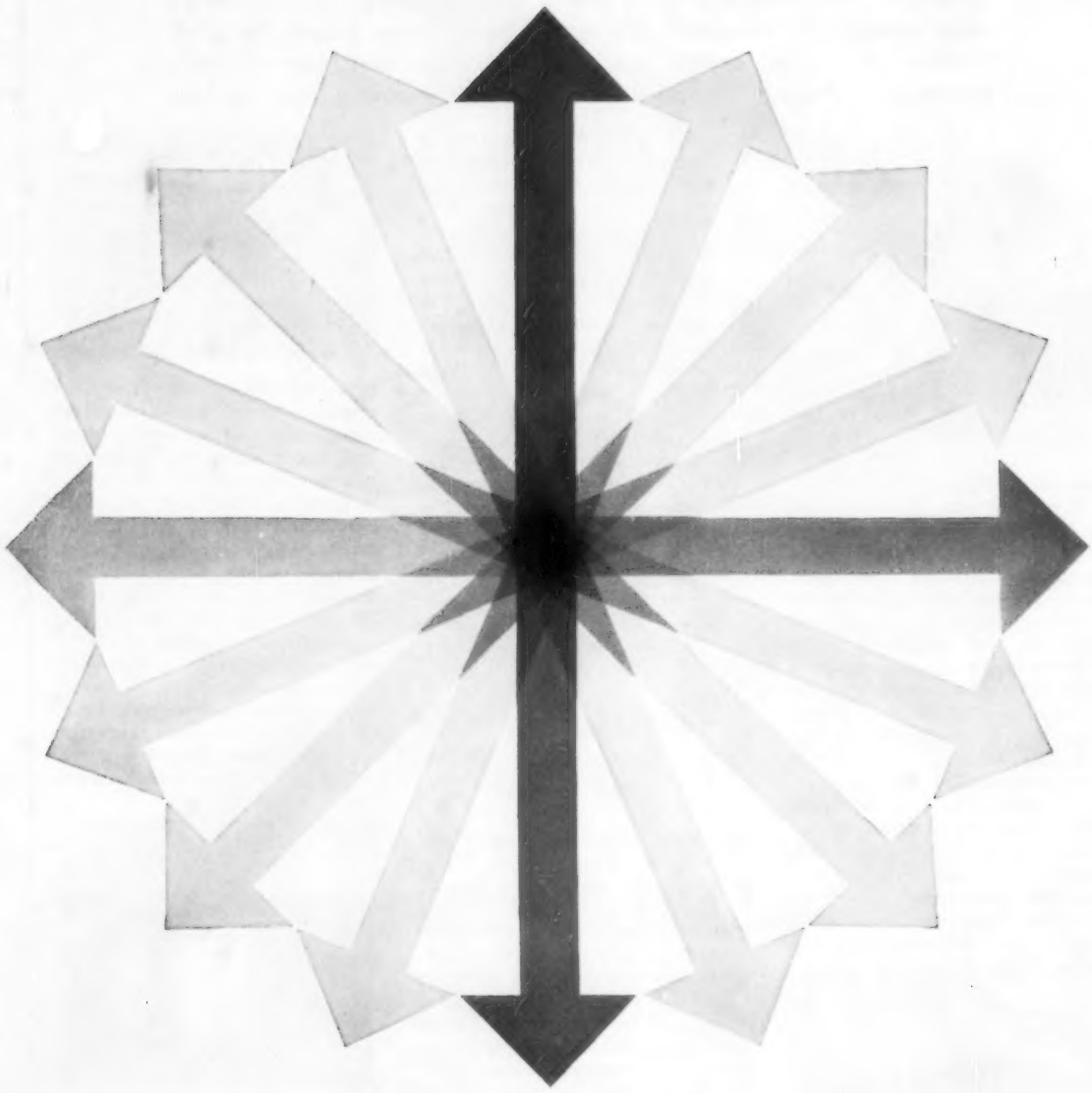
Electric typewriter: The chief design change in this machine (called the Compact) is in the shape of the keyboard, which is slightly curved at either side to fit more exactly the shorter fourth and fifth fingers. The reason: Electrical typing requires only a light touch instead of pressure on the keys as with a manual typewriter. The shape of the keyboard was also reduced so as to be more nearly parallel to the lower arm in typing position. Buttons controlling the ribbon, automatic repeat and so on are all adjacent to the other keys. Automatic carriage return and line-spacing are based on a rack-and-pinion mechanism—one that is relatively simple and economical compared to the mechanisms in manual machines. The deck cover slides forward for ribbon change, type cleaning, etc. Cover, base, and frame, are all made of aluminum diecastings. Makers are Smith-Corona Marchant, Inc., of New York City.



Automatic transmission and brake for bicycles: Shown above is an entirely self-contained unit (about 16 cm long) designed to compete with cable-operated devices. The latter have epicyclic gearing, which usually means that one of the gear members has to be moved from a locked gear-train position to a gear reduction position. The chief objective in this integral transmission was to eliminate shifting of one gear-train member. The basic mechanism provides two speeds and uses an epicyclic gear train, coupled with two threaded screws, one rotating inside the other. Mounted on the screws are driving nuts which, when retarded, traverse along the screws. The outside screw turns at rear sprocket speed, the inside one at two-thirds sprocket speed. A disk type of brake was chosen because of space limitations. Eclipse Machine Division of The Bendix Corp. in Elmira, N. Y. are the manufacturers.

Industrial TV camera: The chief problem here was to make a camera capable of surviving severe industrial and military conditions. The fragile vidicon picture tube had to be protected from shock and vibration. The designers chose a tubular housing with all components mounted on an internal structure independent of the housing itself. The housing is made of heavy-wall tubing, strong enough to isolate the structure from audio noise, to allow for a threaded bezel ring and O-ring sealing system, and to resist explosion and immersion pressures. Cohu Electronics Inc., San Diego, California, are the manufacturers.

Electric drill: This ¼-inch (.625-cm) drill had to have exclusive sales features, function better than competitive products, look totally different, and still be made at a profit. Existing models did not give the operator a full four-finger hold unless he grasped the hot motor. The designers placed the motor at right angles to the spindle. This provided the shortest distance from hand to bit, gave better one-hand control, and assured a completely different appearance. Makers are H. K. Porter Co. Inc., of Philadelphia, Pa.



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GERMAN AIRLINES

Products & Processes (cont.)

Machine perforates plastic: Kendall Co. of Walpole, Mass. (U.S.A.) has devised a novel method for producing perforated plastic sheeting and also providing heat-sealable areas. The process turns prescribed areas of crystalline plastics—Mylar, Saran, Kel-F—into amorphous regions that melt at lower temperature, can be heat-sealed, and are readily perforated. *(Product Engineering)*

Constant-temperature oven: A British inventor, D. J. Fewings of Marconi's Wireless Telegraph Co., Ltd. of Chelmsford, England, has designed a new constant-temperature oven with a novel means of turning itself on and off. The basic principle is simple: The component to be maintained at a constant temperature, and a heater coil, are embedded in a material which expands as it melts and activates a switch that turns the heater on and off. As long as heat input does not exceed heat loss, the current flows to the heater. As soon as it exceeds it and the system temperature begins to rise, the solid melts, expands, compresses the bellows, and hits the switch.

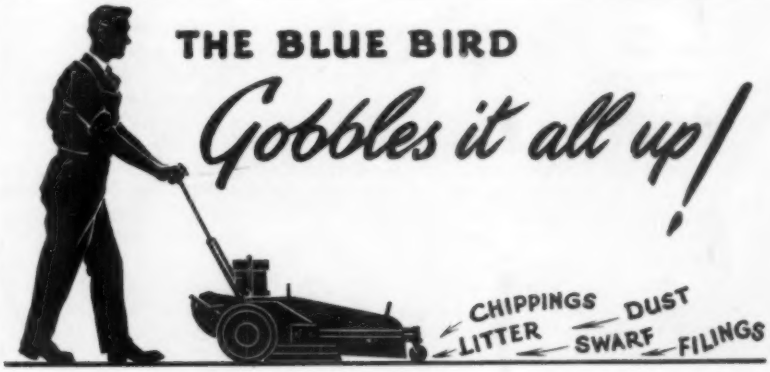
Synthetic resins from Japan: What chemists call the "poor relation" of the xylene family, m-xylene, is finding new potential in a process commercialized by Matsushita Denko of Osaka. The company is producing resins based on the reaction of m-xylene and formaldehyde, for use in rubber adhesives, paints, varnishes, and printing inks.

Radio-spectacles: Montaphon-E.F. Kind of Zurich is marketing spectacles and sunglasses with a tiny radio receiver built in the left side of the frame that has a range of nearly 64 km in daytime (100-kw stations) and receives distant stations at night. The radio is said to be extremely selective, has four transistors, one crystal diode and a ferrite aerial, a tuning condenser and a volume control with a switch. A midget button cell of 1.3 volts runs the radio for 100 hours; there is a spare battery cell in the right frame.

"Pullmanized" freight: Substantial savings in breakage and shock—as well as damage claims—are expected with the Hydroframe railway wagon developed by the Pullman-Standard division of Pullman, Inc. in the U.S. The secret of the car's protective care is a patented shock absorber, extending 75 cm on either end of the car, which takes the bang out of coupling shocks and makes it possible to transport glass, transformers, newsprint, and other difficult freight without damage.

"Smog war" goes on: Nine auto exhaust purifiers have survived preliminary screening out of an original list of sixteen submitted for approval to the state of California. California has an acute air pollution problem, and its standards for auto-exhaust control are correspondingly rigid: an 80% reduction in hydrocarbon emission, 60% reduction in carbon monoxide. The latest device to seek approval, submitted by Davison Chemical Div. of W. R. Grace & Co., is a catalytic system said to operate successfully on gasoline containing lead and other conventional additives.

Non-fading color prints: Thanks to a new process called Permacote, color prints from photo transparencies and color negatives will be able to keep their brightness. The process simply bathes the prints in a chemical solu-



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tion that is opaque to actinic rays, the ultraviolet radiation that causes most severe color fading in dyes. The coating does not change the appearance of the photograph or affect color tones. Berkey Photo Service of New York developed it.

Plastic dock: Howaldtswerke A.G. of Kiel, West Germany, has a new 3,000 ton floating dock made almost entirely of hard polyvinylchloride with a movable roof made of the same material. It is corrosion-proof, and can be used as a floating repair shop.

Plastics sealed ultrasonically: A new ultrasonic sealing device can be incorporated into continuous sealing machines for use with plastics and man-made fibers—mylar, polypropylene, teslar, and hupolene, as well as woven nylon and orlon. The sealer eliminates many of the problems in conventional dielectric sealing, according to the manufacturers: Mylar, for instance, can now be self-sealing whereas previously it was necessary to coat the surface to be sealed. Also, any contaminant between two surfaces is forced out ultrasonically—a particular advantage with food packaging. Powertron Ultrasonics Corp. of Garden City, Long Island, U.S.A., are the manufacturers.

Electricity from waste? The idea of harnessing the energy given off by decaying materials such as molasses, wood cellulose, sawdust and so on, is challenging researchers. One of these, Dr. F. D. Sisler of the U. S. Geological Survey, is working on a "biochemical fuel cell" which would be low in cost, need no moving parts, and work in any climate.

Doors roll off assembly line: A new unit, said to be the first of its kind, combines a series of rapid processes to manufacture wooden interior doors of simulated grain at the rate of up to 5,000 a day. The finished product, hardly distinguishable from actual grained wood, cuts costs by two-thirds. The unit uses inexpensive wood and rolls on simulated wood grains and inks by a lithographic process. One of the secrets of the operation is the use of quick-drying synthetics. The process is patented by Vogelsang Lumber Co. in Hamburg, N. Y., U.S.A.

Miniature loudspeaker: A wafer-shaped loudspeaker that can be made as thin as 1 cm has been developed by Emerson Radio & Phonograph Corp. of Jersey City, U.S.A. Two such speakers mounted in 5-cm thick frames would make possible a dual speaker system in a stereophonic radio system of the future measuring no more than 35 x 60 x 5 cm.

Goodbye to dusty floors? Instead of the familiar dust-laden doormat, a new invention called the Matador wipes the dust off shoes with a flicking action and deposits it in a cavity for collection. Made of vertical rubber sections joined by wire strands, with outer edges of aluminum, the mat comes from Cimex Ltd. of Orpington, Kent, England.

Projector-cum-screen: Fairchild Camera & Instrument Corp. of the U.S. is marketing a fully transistorized, 8-mm sound projector with a built-in screen mounted in a carrying case. A special advantage is the continuous-play magazine, which enables the machine to repeat the film automatically if the ends of the film are spliced together.

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Continuing research at Republic means better steels and steel products

Republic Steel always looks to future needs of the world's steel users as well as to the present. Time, money, and effort are spent each year in a continuing program to produce the newest and the best steels and steel products.

First, there is Republic's research—conducted in the finest laboratories science can design—to develop new steels, to improve present steels, and to find better ways to make them. Then, there are multimillion dollar additions of new production facilities... the constant improvement of existing facilities... the installation of latest quality control equipment and methods.

Republic Steel offers one of the world's widest ranges of standard steels and steel products. You are assured quality steels, complete steel service.

YOU CAN PROFIT BY USING THESE REPUBLIC STEEL PRODUCTS

STAINLESS STEEL

(Sheets, Strip, Bars, Tubing, Wire, Bolts and Nuts)

Resists rust, corrosion and high temperature. Can be polished to a beautiful, lasting luster. Sanitary. Easy to clean.

HOT AND COLD ROLLED SHEETS

Carbon, Alloy and Stainless Steels. In widths up to 90 inches. Uniform in fine surface, and in fabricating qualities.

Known the World Over for Quality Steels

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REPRESENTATIVES IN PRINCIPAL CITIES OF THE WORLD

Engineers from 13 nations Technical Conference on

Thirty-six engineering executives from five continents recently assembled at the general offices of Combustion Engineering in Windsor, Connecticut, for a five day technical conference. Representing seventeen affiliates or licensees of C-E, as listed opposite, they are shown in the photo above with their American colleagues.

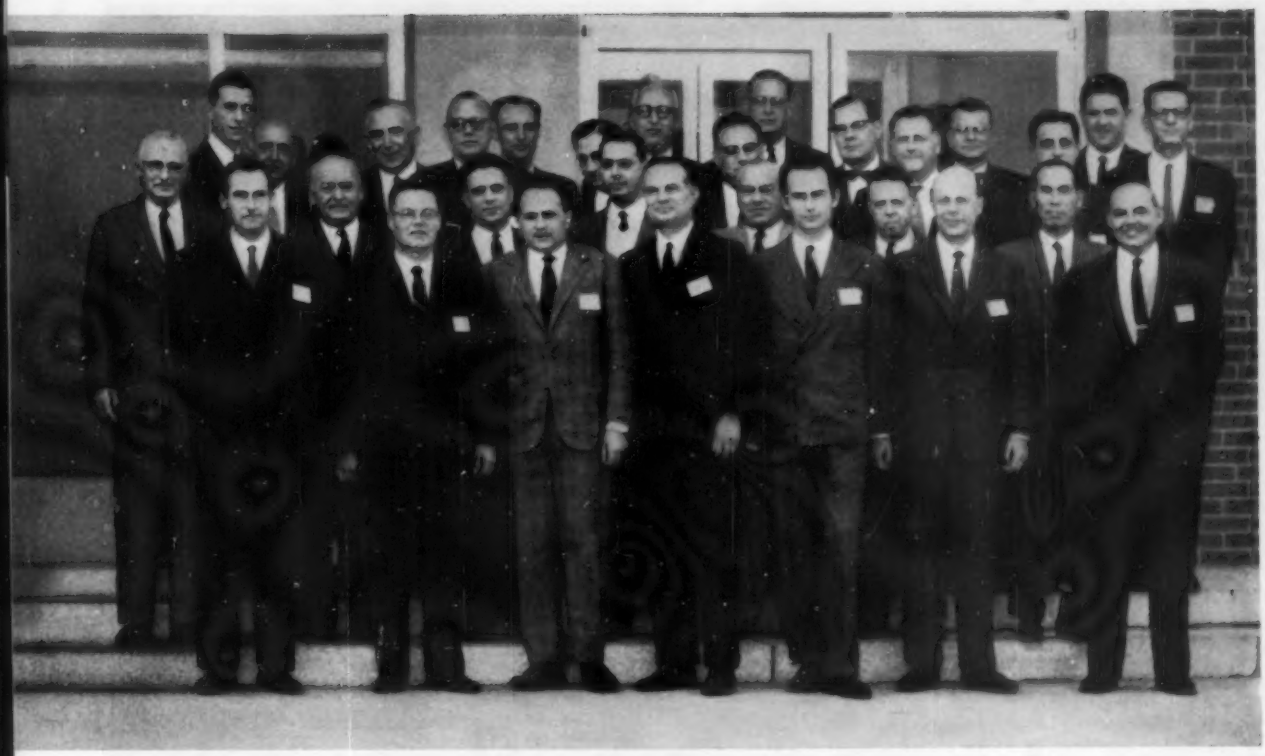
During twelve day and evening sessions they discussed the most significant current engineering aspects of steam generation . . . examining the present state of the art and exploring the new techniques and developments which are changing the complexion of the technology at an ever-increasing rate. In short, they took part in a world-wide interchange of new ideas in modern steam generating practice.

C-E, as a member of this team, believes that the interchange of knowledge is vital not only to individual members, but also to the team itself. In turn, this attitude is your assurance that, no matter your country, your steam generating equipment will be as modern as tomorrow, if it bears the insignia of the C-E flame.

Excerpts from message to Conference by Joseph V. Santry, Chairman, Combustion Engineering, Inc.

"Man stands today, at mid-twentieth century, knowing that the benefits of electric power have made possible remarkable acceleration in labor and capital productivity, have revolutionized his means of communication, and, to some degree, have eased

ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS



join C-E in International Modern Power Practice

the problems he encounters in the everyday business of living.

"Assembled at this conference are guests from thirteen sovereign nations which together produced more than 670,000 million kilowatt hours of electric energy in 1959. This figure is some forty per cent higher than the energy produced in these same countries just five years before. This growth trend will continue.

"It is our purpose to make certain that we, as a worldwide team, continue to set the pace for power progress."

Associates, licensees and representatives throughout the free world

COMBUSTION ENGINEERING

Export Department: 200 Madison Avenue, New York 16, N. Y.

C-327

Representatives From the Following Countries and Companies Attended the C-E International Technical Conference

Argentina	Mellor-Goodwin S.A.C.
Australia	The Superheater Co. (Australia) Pty. Ltd.
Belgium	S.A. Cockerill-Ougree
Canada	Combustion Engineering-Superheater Ltd.
England	International Combustion Ltd.
England	The Superheater Company Ltd.
France	Stein et Roubaix
France	Cie. Des Surchauffeurs
Germany	Kohlenscheidungn-Gesellschaft M.B.H.
Italy	Franco Tosi S.P.A.
Japan	Mitsubishi Nippon Heavy-Ind. Ltd.
Japan	Mitsubishi Heavy-Ind. Reorg. Ltd.
Japan	Mitsubishi Shipbuilding & Engineering Co. Ltd.
Mexico	CE-rrey S.A.
Netherlands	N.V. Koninklijke Maatschappij "De Schelde"
Sweden	AB Svenska Maskinverken
Union of South Africa	Combustion Engineering Africa (Pty.) Ltd.

FLASH DRYING SYSTEMS; PRESSURE VESSELS; SOIL PIPE

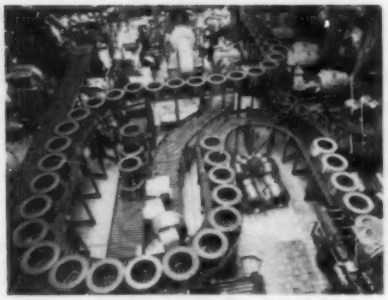
Welder Svensson is going places

He certainly is. Trained at Svenska Metallverken's Welding Institute, he has been busy at atomic reactor projects in Belgium and the Netherlands, as well as in Sweden itself. Aluminium is in many ways an excellent material for nuclear applications, but... considerable skill is required in welding it. Here Svenska Metallverken's long experience of working aluminium has proved invaluable. Even before the first World War, Svenska Metallverken was welding aluminium. It was first in Sweden, too, to use the inert-gas shielded arc process. And Welder Svensson is not exceptional—what is exceptional is the number of Metallverken-trained welders who are qualified for nuclear work.

SVENSKA METALLVERKEN

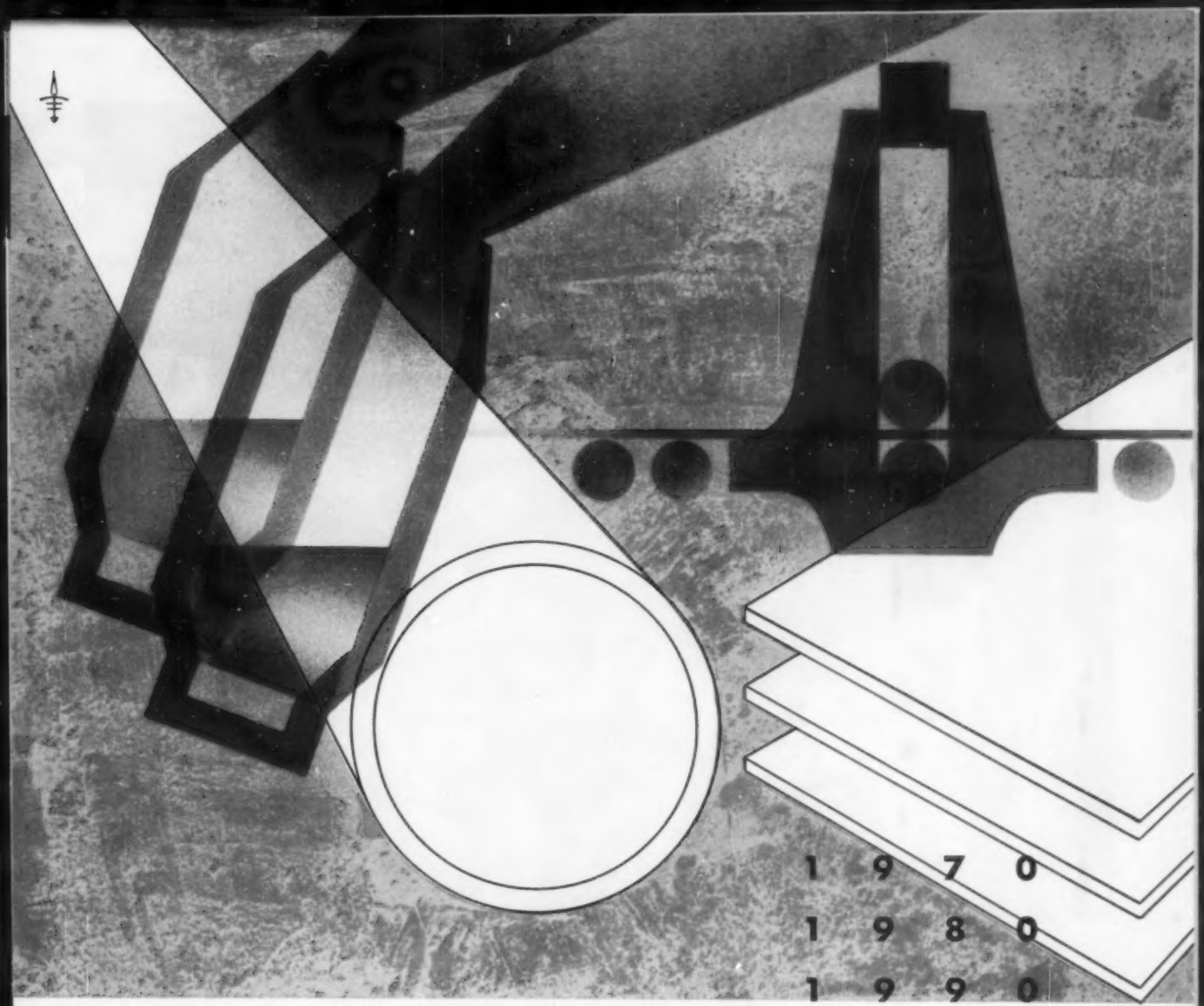
EXPORT DIVISION • VÄSTERÅS • SWEDEN

SWEDEN



Svenska Metallverken for "semis"

With its five separate manufacturing divisions, Svenska Metallverken's yearly output of nonferrous products exceeds 100,000 tons. Besides the sizable facilities at Finspong for turning out rolled and extruded products of aluminium—the raw material for reactor components—Svenska Metallverken makes quantities of rolled, extruded, and drawn pruducts of copper, brass, and other nonferrous alloys, as well as finished components of nonferrous metals and nonmetallics. A letter to our Export Division will show how we can help simplify your assembly and fabrication problems too.



STEEL 2000

It is only forty years, or half a generation, to the year 2000. The expected rate of growth of the world population *) from the present 2.8 billion to more than 6 billion will accelerate the process of industrialization throughout the world to an extent that will dwarf anything accomplished to date.

In such a development, steel takes a key position – in agriculture, in the field of energy and just as much in machinery, in communications and in the building industry.

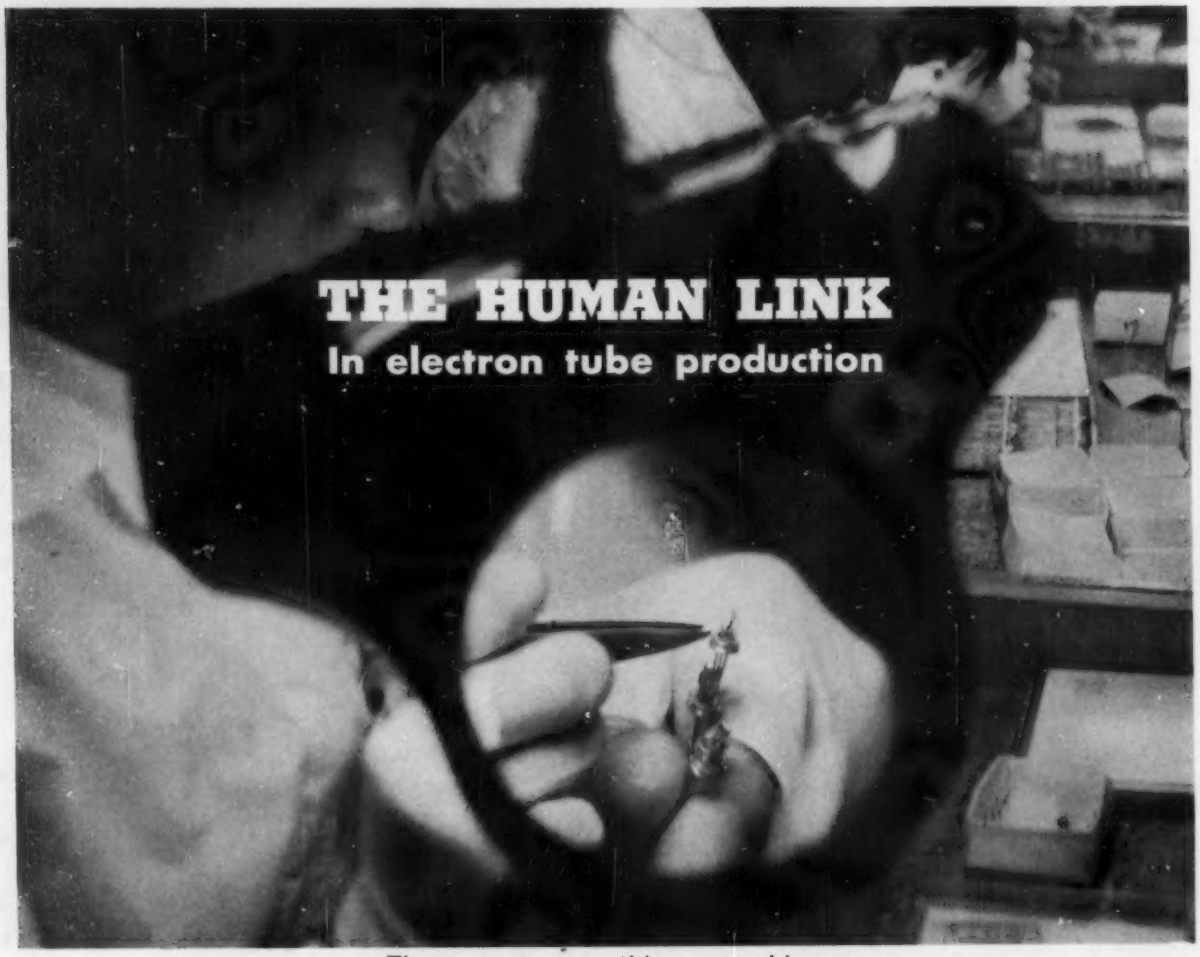
In 1960, about 350 million tons of steel were produced throughout the world. Experts estimate that world requirements of steel will rise to between 1.5 and 2 billion tons. This huge demand for steel calls for world-wide cooperation.

During the last decade PHOENIX-RHEINROHR increased its annual production of crude steel from 1.5 to 3.2 million tons. Intensive long-range research and planning characterize our work for the world-wide markets of the future. Our most important products: pig iron – semi-finished products – sections – steel tubes and tubular goods – plates and plate products – clad plates – SICROMAL- and RHEINROHR-special steels. One of our subsidiaries, PHOENIX-RHEINROHR-INTERNATIONAL, Düsseldorf, Thyssenhaus, delivers pipelines, refineries, fertilizer plants and water supply systems.

All steel users trust this brand:

PHOENIX-RHEINROHR AG VEREINIGTE HUTTEN- UND RÖHRENWERKE DUSSELDORF GERMANY

*) According to population statistics compiled by the United Nations in 1958



There are some things machines can not do.

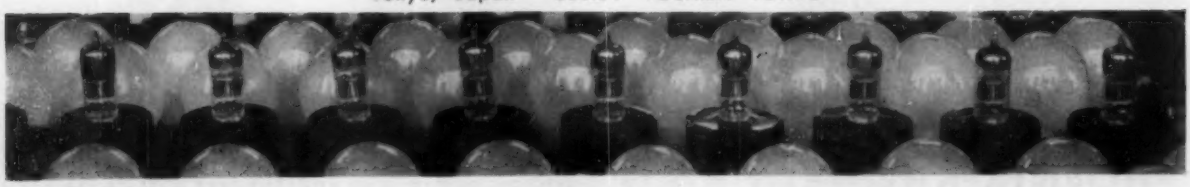
In partnership with automation, skilled fingers like these play a vital role in the assembly of electron tubes at Toshiba plants throughout Japan. Guided by flexible judgment, they are the indispensable human link in a production line of extraordinary machines that help produce an average of four million Toshiba electron tubes a month.

The familiar Toshiba mark means quality in electron tubes, too.

Toshiba
QUALITY SINCE 1875

TOKYO SHIBAURA ELECTRIC CO., LTD.

Tokyo, Japan Cable: TOSHIBA TOKYO



McGRAW-HILL INTERNATIONAL MANAGEMENT'S

Recommended Reading

[NEW BOOKS]

Is an organized approach to cost control really necessary? If a cost control program has failed, should you try again? These and other key questions are answered in THE COST-MINDED MANAGER, by John D. Staley. The author analyzes the basic concepts of cost control and discusses the human factors involved. Included is a group of case studies. *American Management Association, 1515 Broadway, New York 36, N.Y., U.S.A.* 288 *pages,* $6.75.

ASSIGNMENT MANAGEMENT, by J. M. Black, is a guide book for middle management men. It outlines the qualities required in a top-flight manager and tells how to achieve a smooth-running organization, how to be a good planner and successful leader. *Prentice-Hall, Englewood Cliffs, N.J., U.S.A.* 224 *pages,* $5.95.

FLUORESCENT LIGHTING MANUAL, by Charles L. Amick, covers lighting design, installation and maintenance, plus information on the latest wiring methods, materials, control devices, lamps and ceiling suspension systems. Construction detail drawings, charts and tables are also included. *McGraw-Hill Book Co., Inc.,* 330 *West 42nd Street, New York* 36, *N.Y., U.S.A.* 416 *pages,* $12.50.

Can world poverty be conquered through the investment of Western capital? THE ATTACK ON WORLD POVERTY, by Andrew Shonfield, economics editor of the London Observer, surveys all phases of investment in underdeveloped countries of Latin America, Africa and Asia and suggests practical ways for speeding up industrial and technical development. *Chatto & Windus Ltd.,* 40-42 *William IV Street, London WC* 2, *England.* $5.00 *or* 21*s.*

SELLING: ITS BROADER DIMENSIONS, edited by Professors Taylor W. Meloan and John M. Rathmell, is a collection of articles on the various aspects of selling: its development, rewards, different techniques and objectives. *The Macmillan Company,* 60 *Fifth Avenue, New York* 11, *N.Y., U.S.A.* 269 *pages,* $5.00.

LATIN AMERICAN ISSUES, edited by Albert O. Hirschman, is an important collection of essays on the critical problems of Latin American-U.S. relationships and on current economic policy issues. Among the topics covered: new social forces in Latin America, inflation, regional trading groups and the land reform issue. *Twentieth Century Fund,* 41 *East 70th Street, New, New York* 21, *N.Y., U.S.A.* 201 *pages,* $1.45.

From the man who predicted the rise of discount retailing to its present stage, E. W. Weiss now predicts its impact on all marketing in his new book, MERCHANDISING FOR TOMORROW. *McGraw-Hill Book Co., Inc.,* 330 *West 42nd Street, New York* 36, *N.Y., U.S.A.* $7.50.

[DIRECTORIES, REFERENCES]

THE GUIDE TO AMERICAN DIRECTORIES (fourth edition) lists over 2,300 trade, industrial, professional and business directories including titles, publishers, prices, description of contents, cross indexes. There is also an international section. *B. Klein & Company,* 27 *East 22nd Street, New York* 10, *N.Y., U.S.A.* 450 *pages,* $20.00.

Buying equipment? The 1961 edition of FACTORIES OF CAPITAL GOODS IN HOLLAND lists only the major Dutch producers of machines and tools used in construction, shipbuilding metal-working, electrical engineering, power, fuel and textile industries. *Netherlands Trade Commission,* 10 *Rockefeller Plaza, New York* 20, *N.Y., U.S.A.* 192 *pages.*

The 1961 edition of The American Automobile's WORLD AUTOMOTIVE MARKET SURVEY AND MOTOR CENSUS is now available. Write to the Research Manager, *The American Automobile,* 330 *West 42nd Street, New York* 36, *N.Y., U.S.A.* $2.00.

PHILLIP's PAPER TRADE DIRECTORY OF THE WORLD—1961 includes a glossary of trade terms in six languages. *S. C. Phillips & Co., Ltd., Alliance House,* 50-51 *Fetter Lane, London EC* 4, *England.* 752 *pages,* £2.3.6 *or* $6.10.

Business International has published the 1961 edition of SOLVING FOREIGN BUSINESS PROBLEMS. This collection of 100 case studies covers techniques being used by American firms of every size for solving problems in earning profits overseas. Coverage is given to finding capital for expansion abroad, selling the growing African market, and organizing for profits in the EEC. *Business International,* 200 *Park Ave. South, New York* 3, *N. Y., U.S.A.* 130 *pages,* $30.00.

The third edition of THE GLOSSARY OF PACKAGING TERMS lists trade terms used for packaging materials, processes, methods and machinery, plus weights, measures and descriptions of how container dimensions are taken and recorded. *Packaging Institute,* 342 *Madison Avenue, New York* 17, *N.Y., U.S.A.* 172 *pages,* $3.50.

[REPORTS, PAMPHLETS]

TOMORROW'S POWER SOURCES (Product Engineering, June 26, p51) surveys 14 basic power sources that will generate from 1 to 500 hp.

VALVES—a 24-page report by the editors of Power (June, p69)—covers types available, materials in use, and methods of maintenance. 75¢.

ELECTRONICS IN EUROPE—a

special on-the-spot report by the chief editor of Electronics (June 9, p65) analyzes business trends, plants, labor-management relations, professional education and the latest technical developments in European electronics. 75¢.

(For copies of the above McGraw-Hill reprints, write to the Editors, INTERNATIONAL MANAGEMENT, *and your request will be forwarded to the publication in question.)*

CURRENT APPLICATION OF DIRECT COSTING (Research Report 37) summarizes the experiences of 50 companies in applying direct costing principles. The study tells why specific methods were chosen and what results have been obtained. *National Association of Accountants,* 505 *Park Avenue, New York* 22, *N.Y. U.S.A.* 110 *pages* $2.00.

GERMANY BETWEEN EAST AND WEST, by Wolfgang F. Stolper, analyzes the postwar economic records of East and West Germany, their economic prospects, and the economic implications of the various courses open to Germany as a whole. *National Planning Association,* 1606 *New Hampshire Avenue N.W., Washington* 9, *D.C., U.S.A.* 80 *pages,* $1.75.

If copies are still available, the International Chamber of Commerce will send you its background report PRIVATE ENTERPRISE IN ECONOMIC DEVELOPMENT. *International Chamber of Commerce, Cours Albert* 1er, *Paris VIII*^{e}, *France.*

The June issue of VIA PORT OF NEW YORK will tell you all about the containerization of international waterborne freight. *Editor, Via Port of New York, Port of New York Authority,* 111 *8th Avenue, New York* 11, *N.Y., U.S.A.*

Personal Business

That physical checkup

Many executives avoid regular physical examinations, reports *Business Week.* Yet specialists say you are fooling yourself (or showing undue anxiety) if you are middle-aged and are still shying away from an annual checkup. Do it now.

Even a routine physical will at least reveal most serious conditions that need further attention. Consider just one major hazard—cancer. The cure rate for cancer is about 33⅓%, but it could be at least 50%, say the experts, if people would take full advantage of what science offers. This means, basically, the routine physical examination, which provides an early diagnosis.

Interestingly, a 12-year test at New York's Strang Cancer Clinic shows that regular checkups can, in effect, raise the usual cure rate for intestinal cancer from 30% to 85%. Similar striking comparisons could be given for many major illnesses.

If you are one of those that have neglected a yearly checkup, you would be wise to start with quite a complete examination, including some tests that are often omitted. Besides the usual routine, specialists say, be sure you get the following:

X-ray of the chest, revealing, among other things, any enlargement of the heart and various lung diseases, tumors, etc.

Electrocardiogram, charting the action of the heart.

Complete blood count, revealing most blood disorders; blood sedimentation test to discover various infections; blood sugar test for hidden diabetes; blood cholesterol test to disclose tendency to coronary ailment; urea nitrogen test of kidney function; and uric acid test for hidden gout.

Complete gastrointestinal X-ray series, which involves tracing barium through the upper intestinal tract, plus barium enema to check the lower part of the tract.

Rectal examination. But note that prostate enlargement is common in men over 50, and in the majority of cases is not due to cancer.

The well-dressed businessman

One of London's leading tailors and sartorial authorities gives this advice on **how to look after clothes** in the British magazine *Business:*

Never wear a suit for two days in succession. Give it a chance to smooth out its creases and wrinkles.

Always put the jacket on a hanger and button it up.

Always brush a suit before you put it away or before you wear it.

Do not weigh the pockets down with luggage. If you have to carry a lot with you, tell the tailor and let him make allowance in the cut.

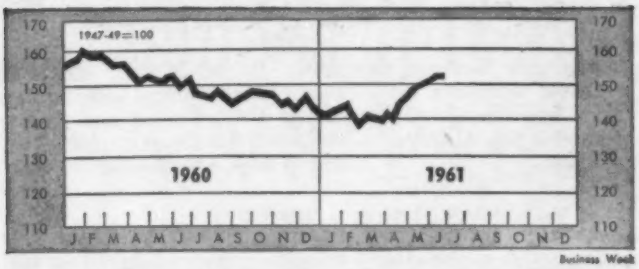
Undo your jacket button before sitting down.

To be smart you need six suits: three for business, one or two for country or informal wear, and one lightweight.

Who said dandyism was dead? Some intrepid fops must be buying—and sporting—the scented ties that are the latest in men's fashion. You have your choice of strawberry, pineapple, cut grass, copper, leather, and blue grape perfumes. Patterns match the perfumes: Suitcases decorate the leather-scented tie, coins and a kettle the copper tie. Countess Mara, Inc., of New York is selling them at $12.50 each.

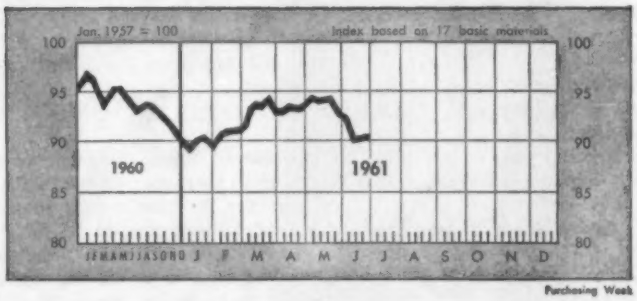
Double-breasted suits are making a comeback, says *The Wall Street Journal.* But your old-style double-breasted suit will no longer be in fashion: The '61 models have narrow lapels and an overlap of only about 8 cm.

Business at a Glance



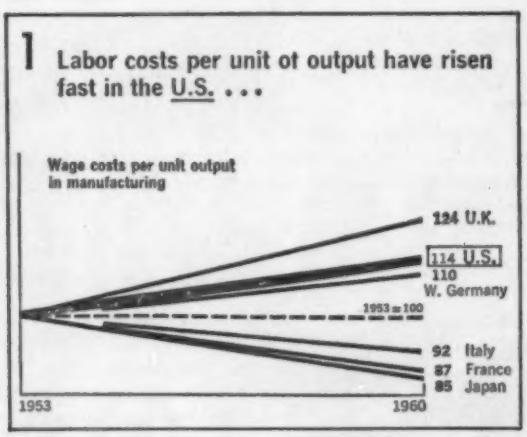
U.S. Business Trend

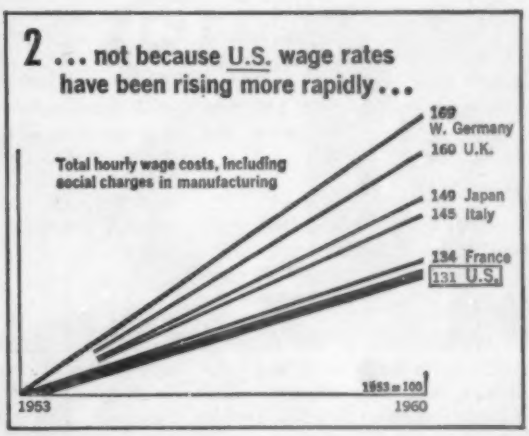
The pace of recovery slowed slightly in June, and is levelling further—owing to seasonal factors such as vacations and the auto industry's change-over to new models. But business is expected to show autumn vigor next month. Construction, personal income, retail sales, manufacturing are strong; foreign trade less so, but moving up (note, however, that a major U.S. "import"—foreign travel—lags). Problem: price-cutting, which means thinner profits. (page 3).

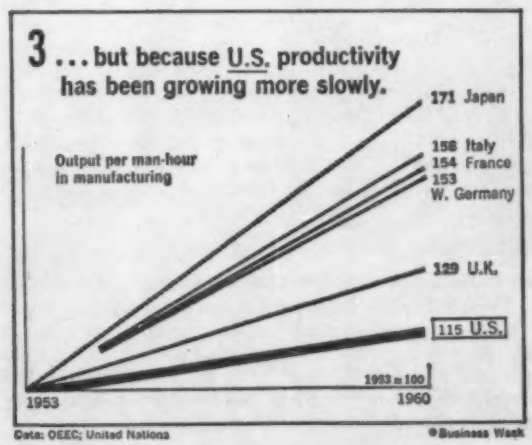


U.S. Commodity Trend

Better business—but weak prices. Prices of most industrial materials have fluctuated widely, with strong downward moves in June. Certain steel goods, scrap, paper and pulp, chemicals, rubber, petroleum have dropped. Zinc and lead probably hit bottom early in July. Copper prices have weakened some, but tin is still in short supply—and relief will not come quickly. The price outlook in the U.S.: A slow, spotty upward movement over the next few months.




2 . . . not because U.S. wage rates have been rising more rapidly . . .
Total hourly wage costs, including social charges in manufacturing
169 W. Germany
160 U.K.
149 Japan
145 Italy
134 France
131 U.S.
1953 = 100
1953
1960



Productivity: Key to Competition?

The U.S. and Britain have lost ground in export markets since 1953—at least partly because their unit costs of production have risen more than those of chief competitors. Are wage rises to blame? Not wholly, according to the charts. The culprit seems to be a slower improvement in productivity.

While U.S. productivity—output per man-hour in manufacturing—was rising 15%, British productivity rose 29%. But Germany, France, Italy showed gains of over 50%, and Japan soared 71%.

What to expect? In the opinion of some U.S. economists, the British problem may be worsening and the American improving slightly. There is a growing determination in the U.S. to hold wage increases in line with productivity gains, and exports have shown some rise. A crucial question: Will U.S. steel prices rise in October?

McGRAW-HILL INTERNATIONAL MANAGEMENT'S

Last-Minute Memos

Noblesse oblige: Kennecott's Braden Copper Co. in Santiago, Chile, is donating $50,000 as a starter to help finance a study of diversification of the Chilean economy. The purpose of the study will be to find a way to free the country from dependence on a single product—copper.

Natural gas for industry: The Iraqi government is now laying a $3-million gas pipeline from its Rumeila oilfields to the site of a projected chemical fertilizer plant. It will be the first use of Iraqi gas for industry. Interesting sidelight: Italians, Americans, and Russians are all involved in some aspect of the project.

Diversification: Major Japanese trading firms have decided to diversify their efforts, in an attempt to develop a number of new $100-million a year markets rather than depend so on the huge U.S. market. Marubeni, Nissho, and other big traders plan to increase staffs and open new offices in Europe and Africa. And they will put more emphasis on heavy equipment and chemicals, less on textiles.

To irrigate Syria: The United Arab Republic (UAR) will receive $125-million in assistance from West Germany to harness the Euphrates River in Syria for irrigation and power. Other Western nations are expected to contribute to the $400-million project which will help irrigate 6,000 sq. km. and produce 500,000 kw. of power. It is considered the greatest economic development scheme in Syria's history.

Philips on the move: Philips Lamp of the Netherlands is moving deeper into the U.S. market. Through its U.S. holding company it has bought one of the large American phonograph-record companies, as well as a record-pressing firm. Further diversification: Philips interests are expanding their American pharmaceutical activities—and introducing a radical new process for manufacture of synthetic steroid drugs.

Tax-exempt business: Puerto Rico is offering a special new incentive to investors: a 13-year exemption from income, property, and municipal taxes for new enterprises in "less developed" towns of the island.

No drivers: French auto makers, viewing their sagging export market, fear 1961 sales will be far less than those of 1960. From January to May, auto output dropped 14%, exports 32%.

Prefabricated houses: National Homes Corp., major U.S. producer of prefab houses, will enter the foreign market, selling and erecting their products in Switzerland, Germany, France, and Italy with help from Lear Inc., fast-diversifying maker of aviation equipment. The first houses will be expensive—$28,000 to $30,000.

Talking picture?: The U.S.A.'s Emerson Radio & Phonograph Corp. is experimenting with a high-fidelity loudspeaker which can be hung on a wall like a painting. The new wafer-thin speakers, developed by the Weizmann Institute in Israel, produce better sound and are great space-savers, says Emerson. Other uses are: microphones, hearing aids, military instruments.

Inns in Africa: Hilton Hotels, world's largest hotel operator, is moving fast into Africa. It is involved in projects in Tunisia, Ethiopia, Sudan, Libya, Morocco, Ghana, Nigeria, and Sierra Leone. Hilton is also setting up an Africa-Asia headquarters in Cairo's Nile Hilton.

A glass of beer: A glass factory and a major brewery now going up in Western Nigeria are said to represent the largest involvement of private Nigerian capital in an industrial enterprise. Capital of about $6-million comes from three partners: the Western Nigerian government, Amkor Corp. of New York, and two Nigerian businessmen.

Sicily's new look: Plenty of raw material and labor, plus a strategic location for tapping Mediterranean markets, helps Sicily lure more investments. By end of 1961, four of the largest Italian chemical companies and several U.S. chemical and oil producers will have invested nearly $500-million there, all in the last five years.

Expansive Finns: The largest flour-miller in Finland will be the country's first company to set up shop within the European Common Market. The Vaasa Steammill Co. will make hardbread in an $8-million plant in Holland—with aid from Dutch financial institutions.

Cuban cobalt: Russia is financing a nickel-cobalt processing plant in Cuba, and will buy the plant's total annual output of 64-million kilos of metal. But trade exporters wonder whether Russia will be able to use the metal internally—or whether the metal will be unloaded on the world market at depressed prices.

TV broadcasting: Pye Ltd. of London has just produced a complete small scale television broadcasting unit, with a range of 10 miles. The complete unit sells for $47,000 and includes a studio, control room, telecine, transmitters, masts and aerial. The unit is designed for small communities which cannot afford more elaborate equipment.

Little-known, fast-growing: The demand for carbon black, an essential ingredient in rubber manufacturing, in the non-Communist world grows at 10.8% yearly, thanks to a surging rubber industry which takes over 95% of total output. U.S. manufacturers, who used to enjoy a near-monopoly on the product, are rushing to build overseas capacity. By the end of 1962, world capacity is likely to be 21% higher than it is now, and much of it will be financed wholly or partly by American capital.

Patent-idea pending: A Netherlands proposal for handling patents would publish a patent application when it is filed, but not issue the patent until a need for it has been shown. The scheme would avoid the processing of never-to-be-used patents.

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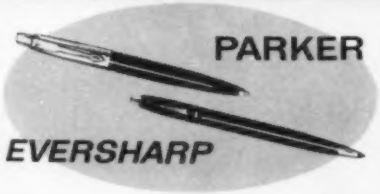

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AUSTRALIA

BRISTOL-MYERS CO. Pty. Ltd., (Manufacturing chemists) reports from Sydney, "The savings on accounting costs in one year will more than pay for our Burroughs Typing Sensimatic."

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